

IDENTIFICATION

PRODUCT CODE: DEC-S8-ORTSA-B-LA
PRODUCT NAME: RTS-8 PAPER LISTING
DATE CREATED: SEPT., 1975
MAINTAINER: SMALL SYSTEMS SOFTWARE ENGINEERING

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45 /RTS8 V2 EXEC PARAMETERS - EDITED BY USER
46
47
48 0001 PDP8E=1
49 0000 PDP12=0
50 0001 EAE=1
51 0001 PWRFL=1
52 0030 HGHFLD=30
53 0023 NTASKS=23
54 0001 CHECKPT=1
55 0000 PARTNS=0
56
57 /THE N PARTITIONS ARE NUMBERED FROM 0 TO N-1)
58
59 /COMMON TASK NUMBERS - EDITED BY USER
60 /IT IS ADVISABLE TO DEFINE ALL TASKS HERE, NAMES GIVEN BELOW
61 /ARE USED BY SOME SYSTEM TASKS AND SHOULD BE DELETED FROM THIS
62 /LIST IF THE CORRESPONDING TASK IS NOT INCLUDED IN THE SYSTEM
63
64 0001 CLOCK=1
65 0002 PWRFL=2
66 0003 TTY=3
67 0004 LPT=4
68 0005 MCR=5
69 0006 LTA=6
70 0007 DTA=7
71 0021 SWAPPER=21
72 0010 RK8=10
73 0011 RF08=11
74 0012 DF32=12
75 0013 CSA=13
76 0014 CSAF=14
77 0016 ICS=16
78 0017 RXBA=17
79 0023 OSB=NTASKS
80 0020 OSOF=20
81
82 /SOFTWARE PARAMETERS - EDITED BY USER
83
84 IFDEF OS8 <
85 0002 OSFLDS=2
86 0030 OSKBDV=30
87 0031 OSTTDV=31
88 0010 OSSYSD=KK8
89 0004 OSFILL=4
90 >
91 IFDEF MCR <
92 0001 MCRSYS=1
93 >
94 IFDEF CLOCK <
95 0000 CLKTYP=0
96 0020 CLKQLN=20
97 DECIMAL
98 0170 HERTZ=120
99 0074 SHERTZ=60
100 OCTAL

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Handwritten notes:
DEC10=4
MODEM=5
NTASKS=23 12
LOOP1=2 11
LOOP2=12

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100
101
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104
      0010 SYS=RK8
      0000 SUNIT=0
      IFDEF SWAPPER

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      /EQUIVALENCES:
      7344 AC7776= CLL STA RAL
      7346 AC7775= CLL STA RTL
      7330 AC4000= CLA STL RAR
      7350 AC3777= CLL STA RAR
      7332 AC2000= CLA STL RTR
      7326 AC0002= CLA STL RTL

      /MONITOR CALL VALUES:
      4020 CAL= JMS 20 /CALL THE EXECUTIVE:
      5424 POSTOS= JMP I 24 /DISMISS AN INTERRUPT
      4425 WAITM= JMS I 25 /WAIT FOR MULTIPLE EVENTS

      /NOTE: "*" MEANS CRITICAL VALUE MAY NOT
      /BE CHANGED WITHOUT MODIFYING SYSTEM CODE!!
      0000 SEND= 0 /SEND MESSAGE
      0001 RECEIV= 1 /RECEIVE MESSAGE
      0002 WAITE= 2 /WAIT FOR EVENT FLAG
      0003 RUN= 3 /CONTINUE TASK EXECUTION
      0004 SUSPND= 4 /SUSPEND TASK EXECUTION
      0005 POST= 5 /POST AN EVENT FLAG
      0006 SKPINS= 6 /INSERT CODE INTO INTERRUPT SKIP CHAIN
      0007 DERAIL= 7 /INITIATE END-ACTION
      0010 BLKARG= 10 /BLOCK TASK FOR REASON SPECIFIED IN ARG
      0011 SENDM= 11 /SEND MESSAGE AND WAIT
      0012 UNBARG= 12 /UNBLOCK TASK FOR REASON SPECIFIED IN ARG
      4000 FREE= 4000 /**FREE PARTITION

      IFOEF UDC <AD=0/DC=1/DI=2/GC=3/EC=4/RC=5
      DC=6/ECT=7/CS=10/DCT=11/AI=12>

      /TASK STATUS FLAGS:
      4000 NONRWT= 4000 /**NONRESIDENT TASK WAIT
      2000 EFWT= 2000 /EVENT FLAG WAIT
      1000 RUNWT= 1000 /SCHEDULE WAIT
      0400 SWPWT= 0400 /**SWAPPER WAIT
      0200 EORMWT= 0200 /EVENT FLAG OR MESSAGE WAIT
      0100 USERWT= 0100 /USER SPECIFIED WAIT
      0040 ENABWT= 0040 /ENABLE WAIT
      0020 MSGWT= 0020 /MESSAGE WAIT
      0010 NETWT= 0010 /NETWORK WAIT (RESERVED FOR POSSIBLE FUTURE USE)
      0001 DNEWT= 0001 /**DOES NOT EXIST WAIT

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150      /SYSTEM LOCATIONS:
151
152      1176 MSGTBL= 1200+2      /TASK MESSAGE TABLE
153      1244 TSTABL= NTASKS*2+2+MSGTBL-4      /TASK STATE TABLE = HOLDS
154      1367 TFTABL= NTASKS*2+4+TSTABL-1      /TASK LINK,UM,OF,IF,PC,AC,MO
155      1414 RESTBL= TFTABL+NTASKS*2      /TASK FLAGS TABLE = HOLDS
156      1420 PARTBL= NTASKS*SWAPPER*2+RESTBL+367774      /TASK STATUS FLAGS
157      0043 COMMAND=43      /RESIDENCY TABLE
158      0035 TSWFLG= 35      /PARTITION TABLE
159      0036 TODL= 36      /SWAPPER COMMAND BUFFER
160      0037 TODH= 37
161      0040 DATE= 40
162      0041 MCREP= 41
163      /TASK SW INHIBIT FLAG IN FIELD 0
164      /LOW ORDER TIME OF DAY IN FIELD 0
165      /HIGH ORDER TIME OF DAY IN FIELD 0
166      /DATE IN OS8 FORMAT IN FIELD 0
167      /MCR START EVENT FLAG IN FIELD 0
168

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169      /TASK TABLE SETUP = "TASK", "CUR", "ININT" AND "START"
170      /MUST BE DEFINED BY TASK:
171
172      01240 0000      *TASK*2+MSGTBL
173      01240 0000      ZBLOCK 2      /MESSAGE BUFFER INITIALLY CLEAR
174      01350 0000      *TASK*4+TSTABL
175      01350 0000      CUR*10+CUR      /INITIAL FLAGS
176      01351 0005      START
177      01352 0000      0      /INITIAL AC 0
178      01410 1000      *TASK+TFTABL
179      01410 1000      ININT

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180 /SWAPPER TASK FOR RTS8 V2
181
182 / 2-APR-75 CHANGE1 FORCE OFF SWPMT AND FORCE ON NONRWT
183 / 18-JUN-75 FIX GROSS BUG IN NON-CHECKPOINTING VERSION
184 / 19-JUN-75 FIX BUG IN CHECKPOINTING VERSION
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229 0021 TASK= SWAPPER /BY SHAWN 7/25/74
230 0000 CUR= 0
231 1000 ININT= RUNWT
232 0000 FIELD= 0 /MUST BE FIELD 0
233 0043 *COMMAND
234 00043 2033 INIT /ENTRY POINT FOR INITIALIZATION
235 00044 2000 XFREE
236 /
237 /PARTITION TABLE (PARTBL) ENTRIES:
238 /MUST BE INITIALIZED BY USER AS EXPLAINED IN THE COMMENTS
239 /DON'T FORGET TO REMOVE LEADING "/" FROM LINES USED
240 /
241 1420 *PARTBL
242 1600 PAGE

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243      0022      NRTASK=SWAPPER+1
244      LOOPNX, IFZERO HGHFLD <ION>
245      01600 2342 ISZ NXTFLG /BUMP TPTABL POINTER
246      01601 2343 ISZ NFLAGS /AND TASK COUNTER
247      01602 5211 JMP LOOPDN /CONTINUE IF ANY TASKS LEFT
248      01603 4020 SWAPEX, CAL
249      01604 0004 SUSPND
250
251      01605 1377 START, SWAPON, TAD (NRTASK+TPTABL
252      01606 3342 DCA NXTFLG /POINTS TO NEXT TPTABL ENTRY
253      01607 1376 TAD (NRTASK+NTASKS
254      01610 3343 DCA NFLAGS /TPTABL ENTRY OVERFLOW COUNT
255      01611 1742 LOOPDN, TAD I NXTFLG /GET A FLAG WORD
256      01612 0310 AND KSWPMT /KEEP ONLY THE SWPMT BIT
257      01613 7650 SNA CLA /THIS TASK IN SWPMT?
258      01614 5200 JMP LOOPNX /NO! TRY NEXT TASK
259
260      01615 6202 IFZERO HGHFLD <IOF>
261      01616 1742 IFNZRD HGHFLD <CIF CUR>
262      01617 1375 TAD I NXTFLG /GET THE FLAG WORD
263      01620 7450 SNA /LESS THE SWPMT BIT
264      01621 5225 JMP GOTONE /TASK RUNABLE NOW?
265      01622 1335 TAD KNRWT /YES! RESIDENCY CANDIDATE
266      01623 3742 DCA I NXTFLG /NO! FLAG HIM NONRESIDENT
267      01624 5200 JMP LOOPNX /AND TRY SOMEONE ELSE
268
269      01625 1342 GOTONE, IFZERO HGHFLD <ION>
270      01626 1374 TAD NXTFLG
271      01627 7104 CLL RAL (=TPTABL
272      01630 1373 TAD (=NRTASK+NRTASK+RESTBL /TASK NUMBER TIMES 2
273      01631 3344 DCA PTR2 /POINTS TO RESTBL WORD 1
274      01632 1744 UNBUSY, TAD I PTR2
275      01633 0372 AND (7774
276      01634 3345 DCA PTR3 /POINTS TO PARTBL WORD 1
277      01635 1745 TAD I PTR3
278      01636 7010 RAR /PARTITION BUSY BIT TO LINK
279      01637 7430 SZL /PARTITION BUSY?
280      01640 5312 JMP CHKPT /YES! CHECKPOINT
281      01641 7004 RAL
282      01642 3363 DCA LEVEL /SAVE IO DRIVER ARG2
283      01643 2344 ISZ PTR2 /POINTS TO RESTBL WORD 2
284      01644 2745 ISZ I PTR3 /FLAG PARTITION BUSY
285      01645 2345 ISZ PTR3 /POINTS TO PARTBL WORD 2
286      01646 1745 TAD I PTR3 /GET PARTITION ADDRESS
287      01647 3364 DCA CORADR
288      01650 2345 ISZ PTR3 /POINTS TO PARTBL WORD 3
289      01651 1745 TAD I PTR3
290      01652 7450 SNA /ANYONE HOME?
291      01653 5272 JMP NORITE
292      01654 3346 DCA PTR4 /POINTS TO RESTBL WORD 1
293      01655 1346 TAD PTR4
294      01656 7040 CMA /COMPARE WITH SAME POINTER
295      01657 1344 TAD PTR2 /FOR NEW RESIDENT
296      01660 7650 SNA CLA /SAME TASK?
297      01661 5300 JMP NOREAD /YES! NO TASK IO
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298      01662 1746 TAD I PTR4
299      01663 7010 RAR
300      01664 7620 SNL CLA /"WRITE ME" BIT TO LINK
301      01665 5272 JMP NORITE /NEED TO WRITE CURRENT OCCUPANT?
302      01666 2346 ISZ PTR4 /NO! READ IN NEW OCCUPANT
303      01667 1746 TAD I PTR4 /POINTS TO RESTBL WORD 2
304      01670 3365 DCA DSKADR /AC=DISK ADDRESS FOR WRITE
305      01671 4346 JMS SENDIT
306      01672 7150 NORITE, CLL CMA RAR /AC3777
307      01673 0363 AND LEVEL
308      01674 3363 DCA LEVEL /CLEAR THE WRITE BIT
309      01675 1744 TAD I PTR2
310      01676 3365 DCA DSKADR
311      01677 4346 JMS SENDIT
312      01700 7240 NOREAD, CLA CMA
313      01701 1344 TAD PTR2
314      01702 3745 DCA I PTR3
315      01703 1745 TAD I PTR3
316      01704 1371 TAD (NRTASK+NRTASK+RESTBL
317      01705 7110 CLL RAR
318      01706 4020 CAL /CLEAR HIS SWAP WAIT
319      01707 0012 UNBARG
320      01710 0400 KSWPMT, SWPMT
321      01711 5205 JMP SWAPON /RESCAN FROM THE TOP
322
323      01712 7326 CHKPT, STL CLA RTL /AC0002
324      01713 1345 TAD PTR3
325      01714 3346 DCA PTR4
326      01715 1746 TAD I PTR4
327      01716 3366 DCA PTR1 /POINTS TO OWNER'S RESTBL WORD 1
328      01717 1766 TAD I PTR1
329      01720 7012 RTR /"CHECKPOINTABLE" BIT TO LINK
330      01721 7620 SNL CLA /IS HE CHECKPOINTABLE?
331      01722 5200 JMP LOOPNX /NO! NEXT REQUEST
332      01723 1366 TAD PTR1
333      01724 7140 CLL CMA
334      01725 1344 TAD PTR2 /COMPARE RESTBL POINTERS
335      01726 7630 SZL CLA /NEWCOMER HIGHER PRIORITY?
336      01727 5200 JMP LOOPNX /NO! NEXT REQUEST
337      01730 1366 TAD PTR1
338      01731 1371 TAD (NRTASK+NRTASK+RESTBL
339      01732 7110 CLL RAR
340      01733 4020 CAL
341      01734 0010 BLKARG
342
343      01735 4000 KNRWT, NDNRWT
344      IFDEF CHECKPT <
345      01736 7240 STA /FLAG PARTITION "FREE"
346      01737 1745 TAD I PTR3
347      01740 3745 DCA I PTR3
348      01741 5232 JMP UNBUSY
349      >
350      IFNDEF CHECKPT <
351      CHKPT, CLA
352      JMP LOOPNX
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353
354 01742 0000 NXTPLG, 0
355 01743 0000 NFLAG8, 0
356 01744 0000 PTR2, 0
357 01745 0000 PTR3, 0
358
359 01746 0000 SENDIT, 0
360 01747 4020 RETRY, CAL
361 01750 0011 SENDW
362 01751 0010 SYS
363 01752 1757 SYSH80
364 01753 1366 TAD ERRORS
365 01754 7650 SNA CLA
366 01755 5746 JMP I SENDIT
367 01756 5347 JMP RETRY
368 01757 0000 SYSH80, ZLOCK 3
369 01762 0000 UNIT, SUNIT
370 01763 1763 LEVEL, 0
371 01764 1764 CORADR, 0
372 01765 1765 OSKADR, 0
373
374 01766 1766 PTR1,
375 01771 6430 ERRORS, 0
376 01772 7774
377 01773 1350
378 01774 6411
379 01775 7400
380 01776 7777
381 01777 1411
382 2000

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PAGE

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/SWAPPER TASK FOR RTS8 V2

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383 0032 TASKX= 32
384 0042 T= 42
385
386
387 /
388 /THE FOLLOWING CODE IS ACTUALLY PART OF THE EXECUTIVE
389 /HOWEVER, IT RESIDES HERE FOR COMPATIBILITY WITH VERSION 1.
390 /ENTER WITH ION, AC=0, LINK=DON'T CARE, SAVE STATE ON INTERRUPTS
391
391 02000 0000 XFREE, 0 /FREE UP A PARTITION
392 02001 1032 TAD TASKX
393 02002 1377 TAD (=NRTASK
394 02003 7510 SPA /THIS TASK LOWER PRIORITY THAN SWAPPER?
395 02004 5600 JMP I XFREE /NO! BAD FREE COMMAND
396 02005 7104 CLL RAL
397 02006 1376 TAD (REST0L
398 02007 3042 DCA T /POINTS TO REST0L WORD 1
399 02010 1442 TAD I T
400 02011 7450 SNA /IS TASK REALLY NONRES?
401 02012 5600 JMP I XFREE /NO! RETURN
402 02013 0375 AND (7774 /YES! ERASE FLAG BITS
403 02014 3042 DCA T /POINTS TO PART0L WORD 1
404 02015 7344 AC7776
405 02016 0442 AND I T
406 02017 3442 DCA I T /FLAG PARTITION "FREE"
407 02020 1032 TAD TASKX
408 02021 1374 TAD (TFTABL
409 02022 3042 DCA T /POINTS TO TASK'S FLAG WORD
410 02023 6202 IFNZRO HGHFLD <CIF 0>
411 IFZERO HGHFLD <IOF>
412 02024 7130 STL RAR
413 02025 1442 TAD I T
414 02026 3442 DCA I T /FLAG TASK NONRESIDENT
415 02027 1373 TAD (=RUNWT=1
416 02030 0772 AND I (SWAPPER+TFTABL
417 02031 3772 DCA I (SWAPPER+TFTABL /CANCEL SWAPPER RUN WAIT
418 IFZERO HGHFLD <ION> /BE NICE SINCE SPACE IS NO PROBLEM
419 02032 5600 JMP I XFREE /FIND NEXT TASK TO RUN

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420 /
421 /THE FOLLOWING CODE IS ENTERED AT LOAD TIME AND EXECUTED
422 /TO INITIALIZE THE RESTBL WITH THE DISK ADDRESS OF EACH
423 /NONRESIDENT TASK, SINCE THIS CODE HAS RETURNED TO THE EXEC,
424 /IT IS NEVER EXECUTED AGAIN, IT COULD BE PLACED IN ANY
425 /PARTITION (SINCE ALL ARE EMPTY AT LOAD TIME) IF DESIRED.
426 /
427 02033 0000 INIT, 0
428 02034 6212 CIP 10
429 02035 4771 JMS I (7700
430 02036 0010 10
431 02037 6212 NEXTIN, CIP 10
432 02040 4770 JMS I (200
433 02041 0005 5
434 02042 2326 2326
435 02043 6211 CDF 10
436 02044 1767 TAD I (7646
437 02045 7450 SNA
438 02046 5266 JMP NOINPUT
439 02047 7104 CLL RAL
440 02050 1366 TAD (-SWAPPER-SWAPPER=1-RESTBL
441 02051 3042 DCA 7
442 02052 1767 TAD I (7646 /
443 02053 1374 TAD (TPTABL /
444 02054 3303 DCA TFPTR /
445 02055 1765 TAD I (7620
446 02056 6201 CDF
447 02057 7001 IAC
448 02060 3442 DCA I 7
449 02061 1703 TAD I TFPTR /
450 02062 0364 AND (-SWPMT-NONRMT=1 //FORCE TASK NON-RESIDENT WAIT BIT ON
451 02063 1363 TAD (NONRMT /
452 02064 3703 DCA I TFPTR /
453 02065 6211 CDF 10
454 02066 1762 NOINPUT, TAD I (7642
455 02067 6201 CDF
456 02070 7700 SNA CLA
457 02071 5237 JMP NEXTIN
458 02072 6212 CIP 10
459 02073 4770 JMS I (200
460 02074 0011 11
461 02075 7340 CLA CLL CMA
462 02076 1233 TAD INIT
463 02077 3233 DCA INIT
464 02100 1361 TAD (ION
465 02101 3633 DCA I INIT
466 02102 5770 JMP I (200
467
468 02103 0000 TFPTR, 0 /
469 02161 6001
470 02162 7642
471 02163 4000
472 02164 3377
473 02165 7620
474 02166 1551

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475 02167 7646
476 02170 0200
477 02171 7700
478 02172 1410
479 02173 6777
480 02174 1367
481 02175 7774
482 02176 1414
483 02177 7756
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AC0002 7326	NRTASK 0022	UNBUSY 1632
AC2000 7332	NTASKS 0023	UNIT 1762
AC3777 7350	NXTFLG 1742	USERWT 0100
AC4000 7330	OSFILL 0004	WAITE 0002
AC7775 7346	OSFLDS 0002	WAITH 4425
AC7776 7344	OSKBDV 0030	XFREE 2000
BLKARG 0010	OSYS00 0010	
CAL 4020	OSTTOV 0031	
CHECKP 0001	OSR 0023	
CHKPT 1712	OSRF 0020	
CLKQLN 0020	PARTBL 1420	
CLKTYP 0000	PARTNS 0000	
CLOCK 0001	POP12 0000	
COMMAN 0043	POP0E 0001	
CORADR 1764	POST 0005	
CSA 0013	POSTOS 5424	
CSAF 0014	PTR1 1766	
CUR 0000	PTR2 1744	
DATE 0040	PTR3 1745	
DERAIL 0007	PTR4 1746	
DF32 0012	PWRF 0002	
DNEWT 0001	PWRFAL 0001	
DSKADR 1765	RECEIV 0001	
DTA 0007	RESEBL 1414	
EAE 0001	RETRY 1747	
EFWT 2000	RF08 0011	
ENABWT 0040	RK0 0010	
EORMWT 0200	RUN 0003	
ERRORS 1766	RUNWT 1000	
FREE 4000	RXB 0017	
GOTONE 1625	SEND 0000	
HERTZ 0170	SENDIT 1746	
HGHFLO 0030	SENDW 0011	
ICS 0016	SHERTZ 0074	
INJT 2033	SKPINS 0006	
INIWT 1000	START 1605	
KNRWT 1735	SUNIT 0000	
KSWPT 1710	SUSPND 0004	
LEVEL 1763	SWAPEX 1603	
LOOPNX 1600	SWAPON 1605	
LOOPON 1611	SWAPPE 0021	
LPT 0004	SWPWT 0400	
LTA 0006	SYS 0010	
MCR 0005	SYSMSG 1757	
MCREP 0041	T 0042	
MCRSYS 0001	TASK 0021	
MSGTBL 1176	TASKX 0032	
MSGWT 0020	TFPTR 2103	
NETWT 0010	TFTABL 1367	
NEXTIN 2037	TODH 0037	
NFLAGS 1743	TODL 0036	
NOINPU 2066	TSTABL 1244	
NONRWT 4000	TSWFLG 0035	
NOREAD 1700	TTY 0003	
NORITE 1672	UNBARG 0012	

ERRORS DETECTED: 0
LINKS GENERATED: 0

WAITE	1240			
WAITH	1180			
XFREE	235	3910	395	401 419
+01771	316	330		
+01772	275			
+01773	272			
+01774	270			
+01775	262			
+01776	253			
+01777	251			
+02161	464			
+02162	454			
+02163	451			
+02164	450			
+02165	445			
+02166	440			
+02167	436	442		
+02170	432	459	466	
+02171	429			
+02172	416	417		
+02173	415			
+02174	408	443		
+02175	402			
+02176	397			
+02177	393			

V3

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/PARAMETERS FOR RTS=8 TASKS (VERSION PAL8=V9D 09/11/75 PAGE 1

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33	/OR RELIABILITY OF ITS SOFTWARE ON EQUIPMENT THAT IS NOT SUPPLIED BY
34	/DIGITAL.
35	/
36	/
37	/
38	/
39	/
40	/
41	/
42	/
43	/
44	/

```

45
46
47      /RTS8 V2 EXEC PARAMETERS - EDITED BY USER
48
49      0001 PDP8E=1
50      0000 POP12=0
51      0001 EAE=1
52      0001 PWRPAL=1
53      0030 HGMFLD=30
54      0023 NTASKS=23
55      0001 CHECKPT=1
56      0000 PARTNS=0
57
58      / (THE N PARTITIONS ARE NUMBERED FROM 0 TO N-1)
59
60      /COMMON TASK NUMBERS - EDITED BY USER
61      /IT IS ADVISABLE TO DEFINE ALL TASKS HERE, NAMES GIVEN BELOW
62      /ARE USED BY SOME SYSTEM TASKS AND SHOULD BE DELETED FROM THIS
63      /LIST IF THE CORRESPONDING TASK IS NOT INCLUDED IN THE SYSTEM
64
65      0001 CLOCK=1
66      0002 PWRP=2
67      0003 TTY=3
68      0004 LPT=4
69      0005 MCR=5
70      0006 LTA=6
71      0007 DTA=7
72      0021 SWAPPER=21
73      0010 RK8=10
74      0011 RFS8=11
75      0012 DFS2=12
76      0013 CSA=13
77      0014 CSAF=14
78      0016 ICS=16
79      0017 RX8A=17
80      0023 OS8=NTASKS
81      0020 OS8F=20
82
83      /SOFTWARE PARAMETERS - EDITED BY USER
84
85      0002 OSFLDS=2      IFDEF OS8 <
86      0030 OSKBDV=30
87      0031 OSTTDV=31
88      0010 OSSYSD=RK8
89      0004 OSFILL=4
90
91      0001 MCRSYS=1      IFDEF MCR <
92
93      IFDEF CLOCK <
94      0000 CLKTYP=0
95      0020 CLKQLN=20
96      DECIMAL
97      0170 HERTZ=120
98      0074 SMERTZ=60
99      OCTAL

```

```

100
101      >
102      0010 SYS=RK8      IFDEF SWAPPER <
103      0000 SUNIT=0
104      >

```

```

105 /EQUIVALENCES:
106
107 7344 AC7776= CLL STA RAL
108 7346 AC7775= CLL STA RTL
109 7330 AC4000= CLA STL RAR
110 7350 AC3777= CLL STA RAR
111 7332 AC2000= CLA STL RTR
112 7326 AC0002= CLA STL RTL
113
114 /MONITOR CALL VALUES:
115
116 4020 CAL= JMS 20 /CALL THE EXECUTIVE
117 5424 POSTOS= JMP I 24 /DISMISS AN INTERRUPT
118 4425 WAITM= JMS I 25 /WAIT FOR MULTIPLE EVENTS
119
120 /NOTE: "*" MEANS CRITICAL VALUE MAY NOT
121 /BE CHANGED WITHOUT MODIFYING SYSTEM CODE!!
122 0000 SEND= 0 /SEND MESSAGE
123 0001 RECEIV= 1 /RECEIVE MESSAGE
124 0002 WAITE= 2 /WAIT FOR EVENT FLAG
125 0003 RUN= 3 /CONTINUE TASK EXECUTION
126 0004 SUSPND= 4 /SUSPEND TASK EXECUTION
127 0005 POST= 5 /POST AN EVENT FLAG
128 0006 SKPIN= 6 /INSERT CODE INTO INTERRUPT SKIP CHAIN
129 0007 DERRAIL= 7 /INITIATE END-ACTION
130 0010 BLKARG= 10 /BLOCK TASK FOR REASON SPECIFIED IN ARG
131 0011 SENDM= 11 /SEND MESSAGE AND WAIT
132 0012 UNBARG= 12 /UNBLOCK TASK FOR REASON SPECIFIED IN ARG
133 4000 FREE= 4000 /**FREE PARTITION
134
135 IFDEF UDC <AO=0;OO=1;DI=2;GC=3;EC=4;RC=5
136 DC=6;ECT=7;CB=10;DCT=11;AI=12>
137
138 /TASK STATUS FLAGS:
139
140 4000 NONRMT= 4000 /**NONRESIDENT TASK WAIT
141 2000 EPWT= 2000 /EVENT FLAG WAIT
142 1000 RUNMT= 1000 /SCHEDULE WAIT
143 0400 SWPWT= 0400 /**SWAPPER WAIT
144 0200 EORMMT= 0200 /EVENT FLAG OR MESSAGE WAIT
145 0100 USERMT= 0100 /USER SPECIFIED WAIT
146 0040 ENABMT= 0040 /ENABLE WAIT
147 0020 MSGWT= 0020 /MESSAGE WAIT
148 0010 NETWT= 0010 /NETWORK WAIT (RESERVED FOR POSSIBLE FUTURE USE)
149 0001 ONENT= 0001 /**DOES NOT EXIST WAIT

```

23

```

150 /SYSTEM LOCATIONS:
151
152 1176 MSGTBL= 1200+2 /TASK MESSAGE TABLE
153 1244 TSTABL= NTASKS*2+MSGTBL=4 /TASK STATE TABLE = HOLDS
154 1367 TFTABL= NTASKS*2+TSTABL=1 /TASK LINK,UM,DF,IF,PC,AC,HQ
155 /TASK FLAGS TABLE = HOLDS
156 /TASK STATUS FLAGS
157
158 1414 RESTBL= TFTABL+NTASKS*2 /RESIDENCY TABLE
159 1420 PARTBL= NTASKS*SWAPPER*2+RESTBL+3&7774 /PARTITION TABLE
160 0043 COMMANO=43 /SWAPPER COMMAND BUFFER
161
162
163 0035 TSWFLG= 35 /TASK SW INHIBIT FLAG IN FIELD 0
164 0036 TOOL= 36 /LOW ORDER TIME OF DAY IN FIELD 0
165 0037 TODH= 37 /HIGH ORDER TIME OF DAY IN FIELD 0
166 0040 DATE= 40 /DATE IN OS8 FORMAT IN FIELD 0
167 0041 MCREP= 41 /MCR START EVENT FLAG IN FIELD 0
168

```

```

169 /RTS=8 SMALL REAL TIME SYSTEM V2
170 /
171 /
172 /
173 /
174 /
175 /
176 /
177 /
178 /
179 /
180 /COPYRIGHT (C) 1974,1975 BY DIGITAL EQUIPMENT CORPORATION
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213
214 /RICHARD LARY LAST EDITED AUG 18, 1974
215 /SHAWN SPILLMAN EDITED THIS ON 14-SEP-74,
216 /STANLEY RABINOWITZ EDITED THIS ON 5-APR-75
217 / ADDED PDP-12 SUPPORT
218 / FIXED ANGLE BRACKET BUG OF SHWANS
219 /
220 /BASED ON T=O=Y JUNE 5, 1973
221 /
222 /IOT'S FOR OPTIONAL HARDWARE:
223 /
224 IFNDEF POP12 <POP12=0> /II' NOT SURE, YOU'RE NOT A PDP-12
225 IFZERO POP8E <
226 IFZERO POP12 <CAFHLT=HL"> /HALT TO LET USER CLEAR FLAGS
227 IFNZRO POP12 <CAFHLT=JMB IOPRST> /ISSUE I/O PRESET ON PDP-12
228 >
229 6007 IFNZRO POP8E <CAFHLT=CAF> /MACHINE WILL CLEAR FLAGS
230 /
231 6254 SINT= 6254 /SKIP ON USER INTERRUPT
232 6274 SUP= 6274 /SET USER MODE FLAG
233 6102 SPL= 6102 /SKIP ON POWER LOW
234 6141 LINC= 6141 /ENTER LINC MODE
235 0002 POP= 2 /ENTER PDP-8/I MODE
236 0004 ESP= 4 /ENABLE SPECIAL FUNCTIONS

```

```
237          /PAGE 0 OF FIELD 0
238
239          0000          *0          /INTERRUPT "VECTOR"
240          0000          0          /SET TO JMP I 3 ON POWER FAILURE
241          00001 5402          JMP I      *+1
242          00002 0204          INTRPT
243          00003 0222 PFLADR, PFLRTN PWRFL <
244          >          /CHANGED BY POWER FAIL TASK
245
246          0017          *17
247          00017 0000 XR, 0          /INDEX REGISTER USED BY EXEC
248          00020 0000 LDC20, 0          /MONITOR CALL LOCATION ** MUST BE AT 20 **
249          00021 6201 DCF, CDF 0
250          00022 6002 CALIOF, IOF
251          00023 5426          JMP I      CALEXC
252          00024 0235          DSPOST
253          00025 0463          XWAITH
254          00026 0400 CALEXC, EXEC          /** MUST BE AT LJC 24 **
255          00027 0000 ACARG, 0          /** MUST BE AT LJC 25 **
256          00030 0000 MPTR, 0          /** MUST BE 400 **
257          00031 0000 MPT2, 0          /HOLDS AC ARG ON EXEC CALLS
258          00032 0000 TASKX, 0          /POINTS TO FIRST WORD OF MESSAGE 0 POINTER
259          00033 0000 INTT, 0          /" " SECOND " "
260          >          /CURRENT TASK NUMBER
261          >          /INTERRUPT=LEVEL TEMPORARY
262          00034 7777 SVSFLG, =1          /SAVE STATE FLAG =
263          >          /-1 MEANS CPU STATE COUNTS & SHOULD BE SAVED,
264          00035 0001 TSWFLG, 1          /0 MEANS CPU STATE IS UNIMPORTANT,
265          >          /TASK SWITCHING INHIBITED FLAG =
266          >          / 1 = TASK SWITCHING ALLOWED
267          >          / 0 = TASK SWITCHING INHIBITED
268          >          /-1 = TASK SWITCHING INHIBITED, RESCAN ASAP
269
270          00036 0000 TODL, 0          /TIME=OF-DAY LOW ORDER
271          00037 0000 TODH, 0          /TIME=OF-DAY HIGH ORDER
272          00040 0227 DATE, TSTCLK          /DATE WORD = USED TO INIT CLOCK HANDLER
273          00041 0000 MCREP, 0          /MCR STARTUP EVENT FLAG
274          00042 0000 T, 0          /NDN=INTERRUPT LEVEL TEMPORARY
275          IFDEF SWAPPER <
276          IFNZRO COMMAN, <_ERROR! CHANGE SWAPPER_>
277          *+2          /SWAPPER LOADS TWO ENTRY POINTS HERE
278          >
279          00045 0000 ZBLOCK 50=,          /RESERVED FOR FUTURE EXPANSION
```

27

```
280          /SET UP EXEC LINKAGE IN FIELDS 1-7
281
282          0001          IFZERO HGHFLD=1084000 <
283          0021          FIELD 1
284          *21
285          10021 6211 CDF 10
286          10022 6202 CIF 0
287          10023 5022 JMP CALIOF
288          10024 0235 DSPOST
289          10025 0463 XWAITH
290          >
291          IFZERO HGHFLD=2084000 <
292          0002          FIELD 2
293          0021          *21
294          20021 6221 CDF 20
295          20022 6202 CIF 0
296          20023 5022 JMP CALIOF
297          20024 0235 DSPOST
298          20025 0463 XWAITH
299          >
300          IFZERO HGHFLD=3084000 <
301          0003          FIELD 3
302          0021          *21
303          30021 6231 CDF 30
304          30022 6202 CIF 0
305          30023 5022 JMP CALIOF
306          30024 0235 DSPOST
307          30025 0463 XWAITH
308          >
309          IFZERO HGHFLD=4084000 <
310          0004          FIELD 4
311          *21
312          40021 6241 CDF 40
313          40022 6202 CIF 0
314          40023 5022 JMP CALIOF
315          40024 0235 DSPOST
316          40025 0463 XWAITH
317          >
```

```

318 IFZERO HGHFLD=5084000 <
319 FIELD 5
320 *21
321 CDF 50
322 CIF 0
323 JMP CALIOF
324 DSPORT
325 XWAITM
326 >
327 IFZERO HGHFLD=6084000 <
328 FIELD 6
329 *21
330 CDF 60
331 CIF 0
332 JMP CALIOF
333 DSPORT
334 XWAITM
335 >
336 IFZERO HGHFLD=7084000 <
337 FIELD 7
338 *21
339 CDF 70
340 CIF 0
341 JMP CALIOF
342 DSPORT
343 XWAITM
344 >
345
346 0000 FIELD 8

```

29

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347 /INTERRUPT ROUTINE
348
349 0200 *200
350
351 00200 6007 TS0LOC, CAFHLT /SO WE CAN START AT 200
352 IFNZRO TS0LOC=200 <ERROR> /080SUP NEEDS THIS HERE
353 IFDEF SWAPPER <
354 00201 4443 NEWTSK, JMS I COMMAND /OO SWAPPER INITIALIZATION
355 > / (SEE SWAP TASK FOR DETAILS)
356 IFNDEF SWAPPER <
357 NEWTSK, ION
358 >
359 00202 5603 INTFGS, JMP I *+1 /GO AND FIND THE FIRST
360 00203 0534 INTAC, FINDJ /TASK TO RUN
361
362 INTRPT,
363 IFDEF DSO <
364 00204 6254 SINT /MUST BE FIRST SKIP IN INTERRUPT CHAIN
365 00205 7410 SKP
366 00206 5600 JMP I TS0LOC
367 >
368 00207 3203 DCA INTAC /SAVE AC
369 00210 6004 IFNZRO PDPSE <GTF>
370 IFZERO PDPSE <
371 RAR /COMBINE LINK, IF AND DF INTO ONE WORD
372 RIS
373 >
374 00211 3202 DCA INTFGS
375
376 00212 6102 USERSK, IFNZRO PHRFAL /VERY HIGH PRIORITY USER FLAG TESTS GO HERE
377 00213 5227 JMP TSTCLK <SPL> /SKIP ON POWER LOW
378 IFNZRO PHRFAL < /NO MORE H,P, SKIPS - GO TO SKIP CHAIN
379 TAD 0
380 00215 3033 DCA INTT /SAVE LOCATION ZERO
381 00216 1377 TAD [JMP I PFLADR
382 00217 3000 DCA 0 /SET UP 0 FOR RESTART
383 00220 7402 HLT /DON'T TRY ANYTHING FANCY
384
385 00221 0000 PWFLEF, 0 /POWER FAILURE EVENT FLAG
386 00222 1033 PFLRTN, TAD INTT /** MUST BE AT PWFLEF+1 **
387 00223 3000 DCA 0 /RESTORE LOCATION OF POWER LOW INTERRUPT
388 00224 1376 TAD (PWFLEF /POST THE POWER-FAIL INTERRUPT
389 00225 5424 POSTOS /TO EXECUTE THE POWER-FAIL TASK (IF ANY)
390 >
391 00226 0325 BSKCHN, DISMIS /BEGINNING OF SKIP CHAIN LIST
392 00227 6203 TSTCLK, CDF CIF 0 /ADDRESS FOLLOWED BY CDF CIF FIELD
393 00230 7000 NOP /SET TO CLK BY CLOCK ROUTINE
394 00231 5626 JMP I BSKCHN
395 00232 6203 ODCIF0, CDF CIF 0 /CLOCK HANDLER ALWAYS IN FLD 0
396 00233 5634 JMP I *+1
397 00234 0325 DISMIS /CHANGED BY CLOCK HANDLER (IF ANY)

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398      /SUBROUTINE TO POST AN EVENT FLAG AND DISMISS FROM INTERRUPTS
399      /ENTER WITH IOF, DF=D.F, OF EVENT FLAG, AC=ADDRESS OF EVENT FLAG
400
401 00235 7450 OSPOST, SNA
402 00236 5325 JMP DISMISS /NO EVENT FLAG - JUST DISMISS
403 00237 3033 DCA INTT
404 00240 7330 AC4000
405 00241 1433 TAO I INTT /LINK=1 IF EVENT "LAG,LT,0,0 IF.GT,0
406 00242 3201 DCA NEWTSK /SAVE OLD VALUE OF EVENT FLAG
407 00243 3433 DCA I INTT /ZERO EVENT FLAG TO INDICATE EVENT COMPLETION
408 00244 1201 TAO NEWTSK
409 00245 7510 SPA
410 00246 5251 JMP ,+3 /** LINK MUST BE 0 HERE IF AC IS NEGATIVE **
411 00247 4775 JMS I (FREEJ /IF E.F. .LT. 0, TASK WAS WAITING FOR EVENT
412 00250 2200 EFMTZORHWT /SO CLEAR "EVENT WAIT" BIT IN FLAG WORD.
413 00251 7620 SNL CLA /IF THE TASK WHICH WAS WAITING ON THIS
414 00252 5325 JMP DISMISS /EVENT FLAG IS HIGHER PRIORITY THAN THE TASK
415 00253 1000 TAO 0 /CURRENTLY RUNNING, SUSPEND THE CURRENT TASK
416 00254 6234 IFOEF 080 <RIB> /UNLESS WE ARE IN A NON-INTERRUPTABLE ZONE
417 00255 0374 AND (7700 / (NAMELY LOGS 0-7" OF A FIELD
418 00256 7640 SZA CLA /NOT USED BY OS/S BACKGROUND)
419 00257 1035 TAO TSWFLG /OR TASK SWITCHING HAS BEEN SPECIFICALLY
420 00260 7740 SNA SZA CLA /INHIBITED BY THE SOFTWARE
421 00261 5265 JMP STOPJ / (BY MAKING TSWFLG LE 0)
422 00262 7240 STA
423 00263 3035 DCA TSWFLG /IF TASK SWITCHING IS INHIBITED,
424 00264 5325 JMP DISMISS /SET FLAG TO INSURE A RESCAN OF THE TASK LIST
425
426 00265 2034 STOPJ, ISZ SVSFLG /IS THE STATE OF "THE CURRENT TASK WORTH SAVING?
427 00266 5303 JMP NOSVST /NO - FORGET IT.
428 00267 1032 TAO TASKX
429 00270 7106 CLL RTL
430 00271 1373 TAO (TSTABL=1
431 00272 3017 DCA XR /SAVE THE CURRENT TASK'S STATE
432 00273 1202 TAO INTFGS
433 00274 3417 DCA I XR
434 00275 1000 TAO 0
435 00276 3417 DCA I XR
436 00277 1203 TAO INTAC
437 00300 3417 DCA I XR
438
439 00301 7501 MQA
440 00302 3417 DCA I XR /SAVE THE HQ
441
442 00303 1201 NOSVST, TAO NEWTSK /WE NOW ATTEMPT TO START UP THE HIGHER
443 00304 6001 ION /PRIORITY TASK, - HOWEVER, SINCE INTERRUPTS
444 00305 3032 DCA TASKX /HAVE BEEN OFF FOR A WHILE, WE RE-ENABLE THEM
445
446
447 /THIS MEANS THAT IF ANYBODY WITH HIGHER PRIORITY THAN "NEWTSK"
448 /GETS AN EVENT-FLAG-SETTING INTERRUPT NOW, WE'LL JUST DASH OFF
449 /AND START HIM INSTEAD.
450
451 /** NOW FALL INTO "STARTJ" ON THE NEXT PAGE **

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31

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452      /CODE TO START UP A TASK
453      /ENTER WITH TASK# IN "TASK", DF=0, ION, NO STATE (SVSFLG=0)
454
455 00306 1032 STARTJ, IFZERO HGHFLD <ION> /INTERRUPTS ALREADY ON IF CIF WORKS
456 00307 7106 TAO TASKX
457 00310 1373 CLL RTL
458 00311 3017 TAO (TSTABL=1 /FORM POINTER INTO TASK STATE TABLE
459 00312 7240 DCA XR
460 00313 6002 STA
461 00314 3034 IOF /OK, THINGS ARE GETTING SENSITIVE - TURN INTS OFF
462 00315 1417 DCA SVSFLG /AND RESET SAVE-STATE FLAG TO "YES"
463 00316 3202 TAO I XR
464 00317 1417 DCA INTFGS
465 00320 3000 TAO I XR
466 00321 1417 DCA 0 /SIMULATE AN INTERRUPT FROM THE TASK
467 00322 3203 TAO I XR
468
469 00323 1417 DCA INTAC /AND DISMISS IT
470 00324 7421 IFNZRO EAE <
471
472 MQL XR /RESTORE HQ
473
474
475
476
477
478
479
480
481
482
483
484
485
486
487
488
489
490
491
492
493
494
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496
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498
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500

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/** NOW FALL INTO "DISMISS" ON NEXT PAGE **

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475 /INTERRUPT DISMISS ROUTINE - ALSO USED TO START TASKS
476
477 DISMISS, IFNZRO PDP8E 4
478 SRQ /ANY OTHER INTERRUPTS PENDING?
479 SRK /NO
480 JMP USER8K /YES = SKIP PREAMBLE STUFF FOR EXTRA SPEED
481
482 TAD INTF68
483 IFNZRO PDP8E 4
484 IFNZRO HGHFLD <RTF>
485 IFZERO HGHFLD <RAL> /RTF DOESN'T WORK RIGHT ON 4K 8E'S
486 CLA
487
488 IFZERO PDP8E 4
489 IFDEF 088 4
490 TAD (788) /PROPAGATE USER-MODE BIT FROM BIT 5 TO BIT 2
491
492 CLL RTL
493 RAL /USER-MODE BIT NOW IN LINK
494 AND (78) /FAKE AN RTP IF NOT ON A PDP8E
495 TAD DCDP
496 DCA DISCDF
497 IFDEF 088 4
498 SZL /IF USER MODE WAS ON WHEN WE INTERRUPTED,
499 SUP /TURN IT ON WHEN WE DISMISS
500
501 AC4000
502 TAD INTF68
503 AND (78) /NOTE THAT THE LINK IS NOW RESTORED
504 TAD DCDIF0
505 DCA DISCIF
506
507 DISCIF, 0
508 DISCDF, 0
509
510 TAD INTAC
511 IFZERO =PDP8E&HGHFLD <IDN> /FOR PRE 8E OR 4K 8E MACHINES
512 JMP I 0
513
514 IFNZRO PDP12 4
515 IDPRST, 0
516 TAD (28) / I/D PRESET BIT IN SPECIAL FUNCTIONS REGISTER
517 LINC /ENTER LINC MODE
518 EOP /ENABLE SPECIAL FUNCTION
519 PDP /BACK TO 8-MODE
520 CLA
521 JMP I IDPRST
522
523
524
525
526
527

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PAGE

33

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528 /RTS=0 EXECUTIVE - PROCESSES USER REQUESTS
529
530 /CALLED BY: JMS 20 /IN ANY FIELD
531 / ARG8
532 /
533 /CODE AT LOC 20 TURNS IOF, DOES CDF CUR AND CIF 0 AND JUMPS HERE
534
535 EXEC, DCA ACARG /SAVE POSSIBLE AC ARGUMENT
536 TAO TSWFLG /TSWFLG=1 HERE UNLESS WE WERE INTERRUPTED
537 SMA CLA /WHEN WE WERE IN THE PAGE 0 CODE, IN WHICH CASE
538 DCA TSWFLG /ITS -1 = ZERO IT IF IT WAS 1
539 ION /IT IS NOW OK TO TURN INTERRUPTS BACK ON
540 RDF
541 TAO ECDIF0
542 DCA EXRET /SAVE RETURN FIELD
543 TAD I (LOC20) /GET LOC 20 OF THE CALLING FIELD
544 DCA LOC20 /SAVE IT IN FIELD 0
545 TAD I LOC20 /GET THE COMMAND
546 IFDEF SWAPPER 4
547 OCA COMMAND /SAVE A COPY FOR LATER
548 TAO COMMAND /IN CASE HE WANTS TO "FREE"
549
550 ISZ LOC20
551 AND (17)
552 TAD CMDJMP
553 DCA .+1 /TURN COMMAND INTO DISPATCH JUMP
554 HLT
555
556 CMDJMP, JMP I .+1
557 XSEND /SEND MESSAGE TO A TASK
558 XRECEIV /GET A MESSAGE FROM THE MESSAGE QUEUE
559 XWAIT /WAIT FOR AN EVENT FLAG TO BE POSTED
560 XRUN /RUN A TASK (IF NOT BEING RUN)
561 XSUSPNO /SUSPEND EXECUTION OF A TASK
562 XPOST /POST AN EVENT FLAG
563 XSKPINS /INSERT SKIP INTO INTERRUPT CHAIN
564 XDERAIL /DERAIL A TASK
565 XBLKARG /BLOCK TASK FOR REASON SPECIFIED BY ARG
566 XSENDW /SEND MESSAGE AND WAIT FOR COMPLETION
567 XUNBLKARG /UNBLOCK TASK FOR REASON SPECIFIED BY ARG
568

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569      /ROUTINE TO DERAIL A TASK'S EXECUTION INTO A SUBROUTINE
570
571      00436 1420 XDERAL, TAD I LOC20
572      00437 2020      ISZ LOC20
573      00440 3042      OCA T      /SAVE ADDR OF DERAIL SUBR
574      00441 1027      TAD ACARG
575      00442 7106      CLL RTL
576      00443 1375      TAD (TSTABL /GET POINTER INTO TASK STATE TABLE
577      00444 3030      OCA MPTR
578      00445 6201      CDF 0
579      00446 1430      TAD I MPTR
580      00447 0374      AND (70 /GET INSTRUCTION FIELD
581      00450 1021      TAD OCOF
582      00451 3254      OCA ORLCOF
583      00452 2030      ISZ MPTR
584      00453 1430      TAD I MPTR /GET CURRENT TASK PC
585      00454 7402 ORLCOF, HLT /CDF TO TASK FIELD
586      00455 3442      OCA I T /STORE PC IN SUBR HEADER
587      00456 6201      CDF 0
588      00457 1042      TAD T
589      00460 7001      IAC
590      00461 3430      OCA I MPTR /SET PC TO SUBR HEADER + 1
591      00462 5326      JMP EXRET /RETURN TO CALLING TASK
592
593
594      /SUBROUTINE TO WAIT FOR MULTIPLE EVENTS
595      /CALLED VIA JMS I 25 WITH INTERRUPTS OFF.
596      /THIS ROUTINE SHOULD BE CALLED AFTER SCANNING THE MULTIPLE EVENT FLAGS
597      / (WITH INTERRUPTS OFF) TO AVOID TURNING INTERRUPTS ON BEFORE THE
598      /WAIT MASK IS PLACED IN TPTABL. THE "BLKARG" CALL TO THE RTS EXEC
599      /WOULD TURN INTERRUPTS ON (IN THE EXEC), THUS INVITING
600      /MULTIPLE-UPDATE PROBLEMS.
601
602      00463 0000 XWAITM, 0
603      00464 1263      TAD XWAITM
604      00465 3020      OCA LOC20 /FAKE A CALL TO EXEC (IN CASE WE MUST WAIT)
605      00466 6214      ROP
606      00467 1331      TAD ECDIF0
607      00470 3326      OCA EXRET
608      00471 3035      OCA TSWFLG /THIS IS STILL PART OF THE FAKE CALL
609      00472 1420      TAD I LOC20 /GET THE WAIT MASK
610      00473 2020      ISZ LOC20
611      00474 7100      CLL /MAKE SURE TSWAIT ZEROS TASK AC
612      00475 5773      JMP I (TSWAIT /GO WAIT ON MASK

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613      /INSERT A DEVICE SKIP INTO THE INTERRUPT CHAIN
614
615      00476 1420 XSKIPINS, TAD I LOC20 /GET THE ADDRESS OF THE SKIP = 2
616      00477 2020      ISZ LOC20
617      00500 3042      OCA T
618      00501 1442      TAD I T
619      00502 7640      SZA CLA /IF ARGUMENT LOC IS NON-ZERO,
620      00503 5326      JMP EXRET /IT IS ALREADY IN THE SKIP CHAIN - IGNORE
621      00504 1372      TAD (OISMIS /CHAIN IT TO THE END OF THE CHAIN
622      00505 3442      OCA I T
623      00506 2042      ISZ T
624      00507 1331      TAD ECDIF0
625      00510 3442      OCA I T
626      IFNZRO HGHFLO <
627      00511 6214      ROP /GET CDF TO NEW "LAST SKIP"
628      00512 1331      TAD ECDIF0
629      00513 6203 INTCDF, CDF CIF 0 /CDF TO FLD OF OLD "LAST SKIP" AND INH INTS
630      00514 6202      CIF 0 /CORRECT I,F. FROM LAST KLUDGEY INSTRUCTION
631      00515 3313      OCA INTCDF /UPDATE "LAST SKIP" FIELD TO NEW ONE
632      >
633      00516 1002      TAD T
634      00517 3733      OCA I INTEND /CHAIN OLD SKIP TO NEW ONE
635      00520 2333      ISZ INTEND
636      IFNZRO HGHFLO <
637      00521 1313      TAD INTCDF
638      >
639      00522 3733      OCA I INTEND
640      00523 7240      STA
641      00524 1042      TAD T
642      00525 3333      OCA INTEND /UPDATE POINTER TO END OF SKIP CHAIN
643
644      00526 7402 EXRET, HLT /CDF CIF RETURN FIELD (ALSO INHIBIT INTERRUPTS)
645      IFZERO HGHFLO <IOF> /INTERRUPTS OFF FOR ISZ I
646      00527 2035      ISZ TSWFLG /ALLOW TASK SWITCHING (SKIPS IF RESCAN NECESSARY)
647      IFZERO HGHFLO <
648      JMP ,+3 /NO RESCAN NECESSARY
649      ION /TASK SWITCHING STILL INHIBITED, TURN ION AND
650      JMP ECDIF0 /STOP CURRENT JOB AND GO TO RESCAN
651      ION /NOW ITS SAFE TO TURN INTERRUPTS BACK ON
652      >
653      00530 5420      JMP I LOC20 /RETURN TO CALLING TASK
654      00531 6203 ECDIF0, CDF CIF 0 /OOPS - WE MUST TASK SWITCH IMMEDIATELY!
655      00532 5771      JMP I (TSTOP /GO STOP THIS TASK AND RUN SOMEONE ELSE
656
657      00533 0226 INTEND, 0SKCHN

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658          IFNDEF SWAPPER <
659 /RTS-8 SCHEDULER = SCANS TASK FLAGS TABLE TO DETERMINE HIGHEST
660 /PRIORITY RUNNABLE TASK = RUNS WITH INTERRUPTS ON (SOMETIMES)
661 /AND IS STATELESS.
662
663 FINDJ,  CLA CLL IAC      /CODE TO FIND FIRST RUNNABLE TASK
664         OCA TASKX       /INITIALIZE TASK NUMBER
665         OCA SVSFLG      /THE MACHINE STATE IS NOW UNIMPORTANT
666         CLA IAC         /AND WE SHOULD RE-ENABLE TASK SWITCHING
667         OCA TSWFLG      /SO THAT IF A TASK BECOMES RUNNABLE
668         TAO (TFTABL     /AFTER WE SCAN IT, IT WILL INTERRUPT
669         OCA XR          /THE SCAN LOOP AND RUN.
670 FINDJL, IFNZRO HGHFLD    <CIF 0> /AS WE SEARCH A TASK'S ENTRY IN THE LIST,
671         IFZERO HGHFLD    <IOF>
672         TAD I XR         /WE ASSUME THAT TASK'S PRIORITY
673         SNA CLA         /LOOK FOR FIRST TABLE ENTRY OF 0
674         JMP I (STARTJ    /THERE HAS TO BE ONE = NAMELY THE NULL TASK)
675         IFZERO HGHFLD    <ION>
676         ISZ TASKX        /BUMP THE TASK NUMBER (AND PRIORITY)
677         /ALLOW INTERRUPTS FOR ONE CYCLE SINCE
678         JMP FINDJL      /"TASK" IS BIGGER THAN CURRENT REJECTED TASK
679         >

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680          IFDEF SWAPPER <
681 /RTS-8 SCHEDULER = SCANS TASK FLAGS TABLE TO DETERMINE HIGHEST
682 /PRIORITY RUNNABLE TASK = RUNS WITH INTERRUPTS ON (SOMETIMES)
683 /AND IS STATELESS.
684 /THIS SCHEDULER, USED WITH THE SWAPPER, IS SLIGHTLY
685 /SLOWER THAN THE PREVIOUS SCHEDULER, USED WITHOUT THE SWAPPER.
686
687          /** NOTE: AC MAY BE NON-ZERO ON ENTRY **
688 00534 7301 FINDJ,  CLA CLL IAC      /CODE TO FIND FIRST RUNNABLE TASK
689 00535 3032         OCA TASKX       /INITIALIZE TASK NUMBER
690 00536 3034         OCA SVSFLG      /THE MACHINE STATE IS NOW UNIMPORTANT
691 00537 7201         CLA IAC         /AND WE SHOULD RE-ENABLE TASK SWITCHING
692 00540 3035         OCA TSWFLG      /SO THAT IF A TASK BECOMES RUNNABLE
693 00541 1370         TAO (TFTABL     /AFTER WE SCAN IT, IT WILL INTERRUPT
694 00542 3017         OCA XR          /THE SCAN LOOP AND RUN.
695 00543 6202 FINDJL, IFNZRO HGHFLD    <CIF 0> /AS WE SEARCH A TASK'S ENTRY IN THE LIST,
696         IFZERO HGHFLD    <IOF>
697 00544 1417         TAD I XR         /WE ASSUME THAT TASK'S PRIORITY
698 00545 7104         CLL RAL         /NON-RESIDENT BIT TO LINK
699 00546 7640         SZA CLA         /LOOK FOR FIRST TABLE ENTRY OF 0
700 00547 5363         JMP NORUN      /THERE HAS TO BE ONE = NAMELY THE NULL TASK)
701 00550 7420         SNL            /IS HE NONRESIDENT?
702 00551 5767         JMP I (STARTJ  /NO! START HIM UP
703 00552 7140         CLL CMA
704 00553 1017         TAO XR
705 00554 3017         OCA XR          /BACK UP AUTOBUMP REGISTER
706         IFNZRO EXEC-SWPNT    <_ERROR! CALEXC ,NE, SWPNT_>
707 00555 1026         TAO CALEXC     /AC = "SWPNT"
708 00556 3417         DCA I XR       /PUT HIM IN SWAP WAIT
709 00557 1366         TAO (-RUNWT=1
710 00560 0765         AND I (SWAPPER+TFTABL
711 00561 3765         OCA I (SWAPPER+TFTABL
712 00562 5334         JMP FINDJ      /FIND SOMEONE ELSE = HOPEFULLY SWAPPER
713         NORUN, IFZERO HGHFLD    <ION>
714 00563 2032         ISZ TASKX      /BUMP THE TASK NUMBER (AND PRIORITY)
715         /ALLOW INTERRUPTS FOR ONE CYCLE SINCE
716 00564 5343         JMP FINDJL    /"TASK" IS BIGGER THAN CURRENT REJECTED TASK
717         >
718 00565 1410
719 00566 6777
720 00567 0306
721 00570 1367
722 00571 1016
723 00572 0325
724 00573 1005
725 00574 0070
726 00575 1244
727 00576 0017
728 00577 0020
729         0600

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730      /SEND A MESSAGE TO A TASK
731
732 00600 7240 XSENDH, STA /SET OR
733 00601 3331 XSEND, DCA SHTFLG /CLEAR WAIT FLAG
734 00602 1420 TAD I LOC20
735 00603 2020 ISZ LOC20 /GET THE
736 00604 3027 DCA ACARG /TASK NUMBER FROM THE ARGUMENT LIST
737 00605 1420 TAD I LOC20 /GET THE ADDRESS OF THE MESSAGE
738 00606 3360 DCA MSGADR
739 00607 1760 TAO I MSGADR
740 00610 7650 SNA CLA /IS THE MESSAGE ALREADY IN A QUEUE?
741 00611 5217 JMP MSGFRE /NO
742 00612 7346 AC7775
743 00613 1020 TAD LOC20
744 00614 3020 DCA LOC20 /BUMP PC BACK TO DO CALL AGAIN
745 00615 1360 MSEFWT, TAD MSGADR
746 00616 5777 JMP I (WAITS /WAIT FOR MESSAGE TO BE FREE
747 00617 2020 MSGFRE, ISZ LOC20
748 00620 1027 TAD ACARG /GET THE ADDRESS OF THE TARGET TASKS
749 00621 4303 JMS SRCOMN /MESSAGE QUEUE POINTER
750 00622 3266 DCA MSGCDF /SAVE CDF TO NEW MESSAGE'S FIELD
751 00623 1021 TAD DCOF
752 00624 3292 ADDTDQ, DCA MPTCOF /SAVE CDF TO FIELD OF CURRENT QUEUE POINTER
753 00625 7201 CLA IAC
754 00626 1030 TAO MPTR
755 00627 3031 DCA MPT2 /GET POINTER TO SECOND WORD OF POINTER
756 00630 1431 TAD I MPT2
757 00631 3042 DCA T /SAVE ADDRESS OF NEXT QUEUE ENTRY
758 00632 1430 TAO I MPTR /FIRST WORD IS A CDF
759 00633 7480 SNA /ZERO TERMINATES THE QUEUE
760 00634 5292 JMP ENDDFQ
761 00635 3236 DCA NXCDF /SAVE CDF
762
763 00636 7402 RCVPTR, HLT
764 00637 7350 NXCDF, AC3777
765 00640 0442 AND I T /FIRST WORD OF MESSAGE HEADER IS TASK#
766 00641 7141 CIA CLL /COMPARE TO NUMBER OF SENDING TASK
767 00642 1032 TAO TASKX /IF NUMBER IS LOWER WE INSERT
768 00643 7620 SNL CLA /THE MESSAGE BEFORE THIS ONE
769 00644 5252 JMP ENDDFQ
770 00645 7201 CLA IAC
771 00646 1042 TAO T
772 00647 3030 DCA MPTR /OTHERWISE GO ON TO THE NEXT
773 00650 1236 TAD NXCDF /QUEUE ENTRY
774 00651 5224 JMP ADDTDQ

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775      /COME HERE WHEN WE HAVE FOUND THE PLACE TO INSERT THE MESSAGE
776
777      ENDDFQ,
778 00652 7402 MPTCOF, HLT /SET DF TO FIELD OF PREVIOUS POINTER
779 00653 1430 TAD I MPTR
780 00654 3252 DCA MPTCOF /SAVE PREVIOUS CDF
781 00655 1266 TAO MSGCDF /LINK THE NEW MESSAGE BETWEEN TWO
782 00656 3430 DCA I MPTR /EXISTING MESSAGES ON THE QUEUE
783 00657 1360 TAD MSGADR
784 00660 3431 DCA I MPT2 /OK = HALF THE LINKAGE IS DONE
785 00661 6002 IOF /MUST TURN INTERRUPTS OFF TO CALL FREEJ
786 00662 1027 TAO ACARG
787 00663 4776 JMS I (FREEJ /CLEAR MESSAGE WAIT BIT FOR RECEIVER
788 00664 0220 MSGWTEORHMT /DO IT NOW SO OF WILL BE CORRECT LATER)
789 00665 1032 TAD TASKX /*** CODE IN THIS RANGE MUST NOT TOUCH LINK ***
790 00666 7402 MSGCDF, HLT /# NDW GO TO THE MESSAGE'S DATA FIELD
791 00667 6001 IDN /# WE'RE SAFE - TURN INTERRUPTS ON
792 00670 3760 OCA I MSGADR /# STORE THE SENDING TASK NUMBER
793 00671 2360 ISZ MSGADR /#
794 00672 1252 TAD MPTCOF /#
795 00673 3760 DCA I MSGADR /# STORE CDF TO NEXT MESSAGE IN Q
796 00674 2360 ISZ MSGADR /#
797 00675 1042 TAO T /#
798 00676 3760 DCA I MSGADR /# STORE ADDRESS OF NEXT MESSAGE IN Q
799 00677 2331 ISZ SHTFLG /# SHOULD WE WAIT ON THIS MESSAGE?
800 00700 5775 JMP I (POSTEX /# NO - RUN RECEIVER IF ITS
801 /# HIGHER PRIORITY, ELSE EXIT
802 00701 7344 AC7776 /DON'T WORRY ABOUT RECEIVER -
803 /WAITING WILL FORCE RESCAN OF TASK LIST -
804 00702 5215 JMP MSEFWT /GO WAIT ON MESSAGE EVENT FLAG
805 /# OF MUST BE SET TO CALLER'S FIELD HERE **
806
807 00703 0000 SRCOMN, 0 /SUBROUTINE USED BY SEND AND RECEIVE
808 00704 7104 CLL RAL /GET POINTER TO A TASK'S
809 00705 1374 TAD (MSGTBL /MESSAGE QUEUE POINTER
810 00706 3030 DCA MPTR
811 00707 6201 CDF 0
812 00710 7344 AC7776
813 00711 1773 TAD I (EXRET
814 00712 5703 JMP I SRCOMN

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815 /RECEIVE A MESSAGE FROM THE TASK'S MESSAGE QUEUE
816
817 00713 1032 XRECEIV, TAD TASKX
818 00714 4303 JMS SRCOMN /GET THE MESSAGE QUEUE PTR FOR THIS TASK
819 00715 3360 DCA STOCDF /SAVE CDF TO CALLING FIELD
820 00716 1021 TAO DCOF
821 00717 3352 RCVLP, DCA PRVCOF /SAVE PREVIOUS Q ENTRIES' FIELD
822 00720 1430 TAO I MPTR /GET MESSAGE QUEUE POINTER
823 00721 7450 SNA /IF ZERO, THERE ARE NO MESSAGES IN THE Q
824 00722 5772 JMP I (WAITM3 /SO HANG THE TASK
825 00723 3331 DCA CHNCOF
826 00724 7201 CLA IAC
827 00725 1030 TAO MPTR
828 00726 3031 DCA MPT2 /GET POINTER TO SECOND WORD OF Q POINTER
829 00727 1431 TAO I MPT2
830 00730 3236 DCA RCVPTR
831
832 00731 7402 SWTFLG, HLT /COF TO FIELD OF Q ENTRY
833 00732 1027 CHNCOF, TAO ACARG /ACARG CONTAINS TASK DEDICATION (IF ANY)
834 00733 7041 CIA
835 00734 7440 SZA /IS RECEIVER DEDICATED TO ANYONE?
836 00735 1636 TAO I RCVPTR /YES - CHECK ORIGIN OF THIS MESSAGE
837 00736 2236 ISZ RCVPTR
838 00737 7104 CLL RAL /HIGH-ORDER BIT (WAIT BIT) IRRELEVANT
839 00740 7650 SNA CLA /CAN THIS MESSAGE BE RECEIVED?
840 00741 5346 JMP RCVOK /YES - PASS IT ON
841 00742 1236 TAO RCVPTR /NO - CHAIN TO NEXT MESSAGE IN Q
842 00743 3030 OCA MPTR
843 00744 1331 TAO CHNCOF
844 00745 5317 JMP RCVLP
845
846 00746 1636 RCVOK, TAO I RCVPTR /GET FIRST WORD OF ENTRY
847 00747 3042 OCA T
848 00750 2236 ISZ RCVPTR
849 00751 1636 TAO I RCVPTR
850 00752 7402 PRVCOF, HLT /SET FIELD OF PREVIOUS Q ENTRY
851 00753 3431 OCA I MPT2 /SET PREV Q ENTRIES' POINTER (BOTH WORDS)
852 00754 1042 TAO T /TO THE CONTENTS OF THIS Q ENTRIES'
853 00755 3430 OCA I MPTR /POINTER, REMOVING THIS ENTRY FROM THE Q
854 00756 7201 CLA IAC /FORM A POINTER TO THE FIRST WORD OF
855 00757 1236 TAO RCVPTR /INFORMATION IN THE REMOVED MESSAGE
856
857 00760 7402 MSGAOR, HLT
858 00761 3420 STOCDF, OCA I LOC20 /AND STORE IT IN THE FIRST ARGUMENT
859 00762 2020 ISZ LOC20
860 00763 1331 TAO CHNCOF /RETURN WITH COF TO MESSAGE IN AC
861 00764 5773 JMP I (EXRET
862 00772 1000
863 00773 0526
864 00774 1176
865 00775 1056
866 00776 1102
867 00777 1126
868 1000 PAGE

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869 /WAIT FOR MESSAGE
870
871 01000 7344 WAITM3, AC7776
872 01001 1020 TAO LOC20
873 01002 3020 OCA LOC20 /MOVE PC BACK TO "JMS 20"
874 01003 7120 STL /SET LINK TO PRESERVE AC ACROSS "TSTOP"
875 01004 1377 TAO (MSGWT /BLOCK TASK ON MESSAGE WAIT
876
877 /COME HERE WITH BLOCKING BITS IN AC.
878 /TASK AC WILL BE CLEARED IF LINK IS 0, PRESERVED IF LINK IS 1
879
880 01005 3344 TSWAIT, DCA BLKMSK /ENTER HERE WITH BLOCKING BITS IN AC
881
882 01006 1032 TSWATX, TAD TASKX /ENTER HERE WITH BLOCKING BITS IN "BLKMSK"
883 01007 1376 TAD (TFTABL /GET INDEX INTO JOB FLAGS TABLE.
884 01010 3042 OCA T
885 01011 1344 TAO BLKMSK /GET BLOCKING BITS
886 01012 6201 CDF 0
887 01013 3442 DCA I T /NO NEED TO OR THEM IN - WORD WAS ZERO BEFORE.
888 01014 6001 ION /((IN CASE WE CAME FROM "WAITE" OR "WAITM")
889 01015 7420 SNL /SHOULD WE CLEAR "ASK AC"?
890
891 01016 3027 TSTOP, DCA ACARG /ENTER HERE WITH TASK AC IN AC
892 01017 1032 TAD TASKX /TO STOP THE CURRENT TASK BUT NOT BLOCK IT.
893 01020 7106 CLL RTL /GET A POINTER INTO THE TASK'S STATE TABLE ENTRY
894 01021 1375 TAO (TSTABL=1
895 01022 3017 DCA XR
896 01023 6201 CDF 0
897 IFNZRO HGHFLO <
898 TAO I (EXRET
899 CLL RAR
900 RTR
901 TAO I (EXRET
902 01030 1373 TAO (=5023 /5023 = 6203 + (6203 SHIFTED RIGHT 3)
903
904 01031 3417 OCA I XR /STORE RETURN IF AND OF=IF
905 01032 1020 TAO LOC20
906 01033 3417 OCA I XR /STORE RETURN PC
907 01034 1027 TAO ACARG
908 01035 3417 DCA I XR /STORE RETURN AC
909 IFNZRO EAE <
910 01036 7501 MQA /EVEN PRESERVE THE HQ OVER MONITOR CALLS
911 01037 3417 DCA I XR /((WHAT THE HECK, ITS ONLY 2 INSTRUCTIONS)
912
913 IFDEF SWAPPER <SWPENT=COMMAND+1 /2NO SWAPPER ENTRY POINT
914 01040 1043 TAD COMMAND
915 01041 7710 SPA CLA /FREE THE PARTITION?
916 01042 4444 JMS I /YES! LET SWAPPER CODE DO IT
917 01043 5772 JMP I (FINDJ /NO! FIND NEXT TASK TO RUN

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918 /SCHEDULE A TASK TO BE RUN
919
920 01044 1371 XRUN, TAD (RUNWT
921 01045 5250 JMP UNBLOK
922
923 01046 1420 XUNBARG,TAD I LOC20 /UNBLOCKING CODE IN ARGUMENT
924 01047 2020 ISZ LOC20
925
926 01050 3254 UNBLOK, DCA UNBMSK /AC CONTAINS REASON FOR UNBLOCKING TASK "ACARG"
927 01051 1027 TAD ACARG
928 01052 6002 IDP /FREEJ IS AN INTERRUPT-LEVEL ROUTINE
929 01053 4302 JMS FREEJ /REMOVE THE GIVEN BLOCKING BIT
930 01054 0000 UNBMSK, 0
931 01055 6001 ION
932 01056 7620 POSTEX, 8NL CLA /SHOULD THE NEW TASK BE RUN NOW?
933 01057 5774 JMP I (EXRET /NO
934 01060 5216 JMP TSTOP /YES-PUT TASK TO SLEEP WITHOUT BLOCKING IT
935
936
937 /SUSPEND EXECUTION OF A TASK
938
939 01061 1371 XSUSPND,TAD (RUNWT
940 01062 5265 JMP BLOK
941
942 01063 1420 XBLKARG,TAD I LOC20 /BLOCKING CODE IN ARGUMENT
943 01064 2020 ISZ LOC20
944 01065 3344 BLOK, DCA BLKMSK /SAVE BLOCKING CODE
945 01066 1027 TAD ACARG /GET TASK TO BE BLOCKED
946 01067 7450 8NA
947 01070 5206 JMP TSWATX /0 MEANS CURRENT TASK
948
949 /
950 /
951
952 01071 6201 CDF 0
953 01072 1376 TAD (TFTABL
954 01073 3042 DCA T
955 01074 1344 TAD BLKMSK /GET THE BLOCKING FLAG(0)
956 01075 7040 CMA
957 01076 0442 AND I T
958 01077 1344 TAD BLKMSK /OR THEM INTO THE TASK FLAG WORD
959 01100 3442 DCA I T
960 01101 5774 JMP I (EXRET /THIS DOESN'T AFFECT US - JUST RETURN

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961 /ROUTINE TO UNBLOCK A TASK'S EXECUTION
962 /ENTER WITH TASK# IN AC, INTERRUPTS OFF, UNBLOCKING BIT IN CALL+1
963
964 01102 0000 FREEJ, 0
965 01103 6201 CDF 0
966 01104 1376 TAD (TFTABL
967 01105 3033 DCA INTT
968 01106 1702 TAD I FREEJ /GET UNBLOCKING BIT
969 01107 2302 ISZ FREEJ /BUMP RETURN POINTER
970 01110 7040 CMA
971 01111 0433 AND I INTT
972 01112 3433 DCA I INTT /REMOVE THE FLAG FROM THE TASK FLAG WORD
973 01113 1433 TAD I INTT
974 01114 7104 CLL RAL
975 01115 7650 8NA CLA /IF THE TASK IS NOW RUNNABLE
976 01116 1032 TAD TASKX /AND HAS A HIGHER PRIORITY THAN THE CURRENTLY
977 01117 1376 TAD (TFTABL /RUNNING TASK, RETURN WITH THE LINK ON,
978 01120 7161 CIA STL
979 01121 1033 TAD INTT
980 01122 7200 CLA /OTHERWISE RETURN WITH THE LINK OFF,
981 01123 5702 JMP I FREEJ

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982          /WAIT FOR EVENT FLAG
983
984      01124  1420  XWAITE, TAD I  LOC20  /GET ADDRESS OF EVENT FLAG
985      01125  2020          ISZ      LOC20
986      01126  3042  WAIT0,  DCA      T      /ENTER HERE FROM SEND
987          IFZRD  HGHFLD  <IOF>  /INHIBIT INTERRUPTS
988      01127  6202          IFNZRD  HGHFLD  <CIF 0> /WHILE TESTING FLAG
989      01130  1442  TAD I      T      /EVENT FLAG IS IN SAME FIELD AS CALL
990      01131  7650          BNA CLA      /ZERO MEANS EVENT COMPLETED
991      01132  5774  JMP I      (EXRET  /SD EXIT IMMEDIATELY
992      01133  0002  IOF          /INTERRUPTS MUST BE OFF BETWEEN SETTING EF
993          /AND SETTING EF WAIT
994      01134  7330          AC4000  /SET EVENT FLAG TO TASK NUMBER
995      01135  1032  TAD        TASKX  /WITH HIGH=ORDER BIT ON TO INDICATE
996      01136  3442  DCA I      T      /THAT TASK IS WAITING FOR EVENT COMPLETION
997      01137  1370  TAD        (EFNT
998      01140  9203  JMP        TSWAIT /AND BLOCK CURRENT TASK ON EVENT WAIT
999          /** NOTE LINK=0 SO ACARG WILL BE CLEARED **
1000
1001          /POST AN EVENT FLAG
1002
1003      01141  1420  XPDST,  TAD I  LOC20  /GET DATA FIELD OF EVENT FLAG
1004      01142  2020          ISZ      LOC20
1005      01143  3344          DCA      ,*1
1006      01144  7402  BLKMSK, HLT          /CDF TO IT
1007      01145  7330          AC4000
1008      01146  1427  TAD I      ACARG  /ADDRESS WAS IN AC AT CALL
1009      01147  3042  DCA      T
1010      01150  3427  DCA I      ACARG  /ZERO EVENT FLAG
1011      01151  7420  SNL          /WAS A TASK WAITING ON EVENT FLAG?
1012      01152  5774  JMP I      (EXRET  /NO = WE'RE DONE
1013      01153  1042  TAD        T      /YES = LOW ORDER BITS ARE TASK NUMBER
1014      01154  3027  DCA      ACARG
1015      01155  1367  TAD        (EFNTJEDRMWT
1016      01156  5250  JMP        UNBLCK  /UNBLOCK THIS TASK FROM EVENT FLAG WAIT
1017      01167  2200
1018      01170  2000
1019      01171  1000
1020      01172  0534
1021      01173  2755
1022      01174  0526
1023      01175  1243
1024      01176  1367
1025      01177  0020
1026          1200

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[illegible]

ACARG 0027	INTRPT 0204	RUNWT 1000	XUNBAR 1246
AC0002 7326	INTT 0033	RX0A 0017	XWAITE 1124
AC2000 7332	LINC 6141	SEND 0000	XWAITM 0463
AC3777 7350	LOC20 0020	SENDW 0011	
AC4000 7330	LPT 0004	SHERTZ 0074	
AC7775 7346	LTA 0006	SINT 6254	
AC7776 7344	MCR 0005	SKPIN0 0006	
ADDT00 0624	MCREP 0041	SPL 6102	
BLKARG 0010	MCRSYS 0001	SRCONN 0703	
BLKMSK 1144	MPTCDF 0652	STARTJ 0306	
BLOK 1065	MPTR 0030	STOCDF 0740	
BSKCHN 0226	MPT2 0031	STOPJ 0245	
CAFMLT 6007	MSEFMT 0615	SUF 6274	
CAL 4020	MSGADR 0760	SUNIT 0000	
CALEXC 0026	MSGCDF 0666	SUSPND 0004	
CALIOF 0022	MSGFRE 0617	SV3FLG 0034	
CHECKP 0001	MSGTBL 1176	SWAPPE 0021	
CHNCDF 0731	MSGTBL 1200	SWPENT 0044	
CLKQLN 0020	MSGWT 0020	SWPMT 0400	
CLKTYP 0000	NETWT 0010	SWTFLG 0731	
CLOCK 0001	NETWSK 0201	SY3 0010	
CNDJMP 0422	NONRRT 4000	T 0042	
COMMAN 0043	NORUN 0563	TASKX 0032	
CSA 0013	NOSVST 0303	TFTABL 1367	
CSAF 0014	NTASKS 0023	TFTABX 1370	
DATE 0040	NXTCDF 0636	TODH 0037	
DCDF 0021	OSFILL 0004	TODL 0036	
DCDIF0 0232	OSFLDS 0002	TOTABL 1244	
DERAIL 0007	OSKBDV 0030	TSTABX 1250	
DF32 0012	OSYS00 0010	TSTCLK 0227	
DISMS 0325	OSTTDV 0031	TSTOP 1016	
DNEWT 0001	OS0 0023	TSWAIT 1005	
DRLCDF 0454	OS0F 0020	TSWATX 1006	
DSPOST 0235	PARTBL 1420	TSWFLG 0035	
DTA 0007	PARTN0 0000	TSLOC 0200	
EAE 0001	PDP 0002	TTY 0003	
ECDF0 0531	PDP12 0000	UNBARG 0012	
EFMT 2000	PDP0E 0001	UNBLOK 1050	
ENABWT 0040	PFLADR 0003	UNBMSK 1054	
ENDDF0 0652	PFLRTN 0222	USER0K 0212	
EORMWT 0200	POST 0005	USERWT 0100	
ESF 0004	POST03 5424	WAITE 0002	
EXEC 0400	POSTEX 1056	WAITM 4425	
EXRET 0526	PRVCDF 0752	WAITM3 1000	
FINDJ 0534	PWFLEP 0221	WAITS 1126	
FINDJL 0543	PWRF 0002	XBLKAR 1063	
FREE 4000	PWRFAL 0001	XDERAL 0436	
FREEJ 1102	RCVLP 0717	XPOST 1141	
HERTZ 0170	RCVOK 0746	XR 0017	
HGHFLD 0030	RCVPTR 0636	XRECEI 0713	
ICS 0016	RECEIV 0001	XRUN 1044	
INTAC 0203	RESTBL 1414	XSEND 0601	
INTCDF 0513	RF00 0011	XSENDW 0600	
INTEND 0533	RK0 0010	XSKPIN 0474	
INTFGS 0202	RUN 0003	XSPSPN 1061	

ERRORS DETECTED: 0
LINKS GENERATED: 0

ACARG	256#	535	574	736	740	706	833	891	907	927
	945	1008	1010	1014						
AC0002	112#									
AC2000	111#									
AC3777	110#	764								
AC4000	109#	404	501	994	1007					
AC7775	108#	742								
AC7776	107#	802	812	871						
ADDT00	752#	774								
AO	135#									
BLKARG	130#									
BLKMSK	880	885	944	955	958	1006#				
BLOK	940	944#								
BSKCHN	391#	394	657							
CAPMLT	226	227	229#	351						
CAL	116#									
CALEXC	252	255#	706	707						
CALIOF	251#	267	296	305	314	323	332	341		
CHANGE	276									
CHECKP	54#									
CHNCDF	825	832#	843	860						
CLKGLN	95#									
CLKTYP	94#									
CLOCK	63#	93								
CMDJMP	552	556#								
COMMAM	160#	276	354	547	548	913	914			
CS	138#									
CSA	74#									
CSAF	75#									
CT	136#									
DATE	166	272#								
DCDF	250#	495	501	751	820					
DCDIF0	395#	504								
DERAIL	129#									
DF32	73#									
DISCDF	496	507#								
DISCIF	505	506#								
DISMIS	391	397	402	414	424	477#	621			
DNEWT	149#									
DRLCDF	582	585#								
DSPOST	253	288	297	306	315	324	333	342	401#	
DTA	69#									
EAE	50#	438	469	909						
ECDIF0	541	606	624	628	650	654#				
EFMT	141#	412	997	1015						
ENABWT	146#									
ENDOFQ	760	769	777#							
EORMWT	144#	412	788	1015						
ERROR	276	352	706	1066						
ESF	236#	517								
EXEC	255	535#	706							
EXRET	542	591	607	620	644#	813	861	898	901	933
	960	991	1012							
FINDJ	360	663	688#	712	917					
FINDJL	670	678	695#	716						
FREE	133#									
FREEJ	411	787	929	964#	968	969	981			
HERTZ	97#									
HGMFLD	52#	282	291	300	309	318	327	336	455	484

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	485	510	626	636	645	647	670	671	675	695
	696	713	897	987	988					
ICS	76#									
INTAC	360#	368	436	468	509					
INTCDF	629#	631	637							
INTEND	634	635	639	642	657#					
INTFGS	359#	374	432	464	482	502				
INTRPT	242	362#								
INTT	260#	380	386	403	405	407	967	971	972	973
	979									
IOPRST	227	514#	520							
LINC	234#	516								
LOC20	249#	543	544	545	550	571	572	604	609	610
	615	616	653	734	735	737	743	744	747	858
	859	872	873	905	923	924	942	943	984	985
	1003	1004								
LPT	66#									
LTA	68#									
MCR	67#	90								
MCREP	167	273#								
MCRSYS	91#									
MPICDF	752	778#	780	794						
MPTR	257#	577	579	583	584	590	754	758	772	779
	782	810	822	827	842	853				
MPT2	258#	755	756	784	828	829	851			
MSEFMT	745#	804								
MSGADR	738	739	745	783	792	793	795	796	798	856#
MSGCDF	750	781	790#							
MSGPRE	741	747#								
MSGTBL	152#	153	809							
MSGTBX	1029#									
MSGWT	147#	788	875							
NE	706									
NETWT	148#									
NEWTSK	354	357#	486	488	442					
NORUN	700	713#								
NORVST	427	442#								
NTASKS	53#	78	153	155	158	159	1029	1032	1038	1040
	1057	1059	1062	1069						
NXTCDF	761	763#	773							
NZRO	1040	1059								
OSFILL	88#									
OSFLOS	84#									
OSKBOV	85#									
OSSYSO	87#									
OSTTGV	86#									
OS8	78#	83	363	416	489	497				
OS8F	79#									
PARTBL	159#	1070								
PARTNS	55#	1071								
PDP	235#	518								
PDP12	49	224#	224	226	227	513				
PDP8E	48#	225	229	369	370	477	483	488	510	
PFLADR	244#	301								
PFLRTN	244	306#								
POST	127#									
POSTDS	117#	309								
POSTEX	800	932#								
PRVCDF	821	850#								
PWFLEF	385#	388								

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PWRF	640								
PWRFAL	510	243	376	370					
RCVLP	8210	844							
RCVOK	840	846#							
RCVPTIR	7620	830	836	837	841	846	848	849	855
RECEIV	1230								
RESTBL	1500	159	1060						
RF08	700								
RK0	710	87	102						
RUN	1250								
RUNWT	1420	709	920	939					
RX0A	770								
SEND	1220								
SENDW	1310								
SHERTZ	900								
SINT	2310	364							
SKPINS	1200								
SPL	2330	376							
SRCOMN	749	807#	814	810					
STARTJ	4550	674	702						
STOCDF	819	857#							
STOPJ	421	426#							
SUP	2320	499							
SUNIT	1030								
SUSPND	1200								
SYSFLG	2620	426	462	665	690	1035			
SWAPPE	700	101	157	159	275	276	353	356	546
	680	710	711	913	1067	1069			650
SWPENT	9130	916							
SWPWT	1430	706	706						
SWTFLG	733	799	831#						
YS	1020								
T	2740	573	506	508	617	618	622	623	625
	641	757	765	771	797	847	852	884	887
	957	959	986	989	996	1009	1013		954
TASKX	2590	428	444	456	664	676	689	714	767
	817	882	892	976	995				789
TBLERR	10660								
TFTABL	1550	158	668	693	710	711	883	953	966
	1066								977
TFTABX	10380	1066							
TODH	165	271#							
TODL	164	270#							
TSTABL	1530	155	430	458	576	894			
TSTABX	10320								
TSTCLK	272	377	392#						
TSTOP	655	841#	934						
TSMALT	612	880#	998						
TSMATX	8820	947							
TSMFLG	163	265#	419	423	536	538	608	646	667
TSLLOC	3510	352	366						692
TTY	650								
UDC	135								
UNBARG	1320								
UNBLCK	921	926#	1016						
UNBMSK	926	930#							
USERSK	3750	480							
USERWT	1450								
WAITE	1240								
WAITH	1100								

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WAITH3	824	871#							
WAITS	746	986#							
XBLKAR	565	942#							
XDERAL	564	571#							
XPOST	562	1003#							
XR	2480	431	433	435	437	440	459	463	465
	470	669	672	694	697	704	705	708	895
	906	908	911						904
XRECEI	550	817#							
XRUN	560	920#							
XSEND	557	733#							
XSENDW	566	732#							
XSKPIN	563	615#							
XUSPND	561	939#							
XUNBAR	567	923#							
XWAITE	559	984#							
XWAITH	254	289	298	307	316	325	334	343	602#
_00373	430	450							603
_00374	417								
_00375	411								
_00376	380								
_00377	381								
_00565	710	711							
_00566	709								
_00567	702								
_00570	693								
_00571	655								
_00572	621								
_00573	612								
_00574	580								
_00575	576								
_00576	551								
_00577	543								
_00772	824								
_00773	813	861							
_00774	809								
_00775	800								
_00776	787								
_00777	746								
_01167	1015								
_01170	997								
_01171	920	939							
_01172	917								
_01173	902								
_01174	898	901	933	960	991	1012			
_01175	894								
_01176	883	953	966	977					
_01177	875								

V3

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1 /PARAMETERS FOR RTS-8 TASKS (VERSION 2)
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45 /RTS8 V2 EXEC PARAMETERS - EDITED BY USER
46
47
48 0001 PDP8E=1
49 0000 PDP12=0
50 0001 EAE=1
51 0001 PWRFL=1
52 0030 MGFLOD=30
53 0023 NTASKS=23
54 0001 CHECKPT=1
55 0000 PARTNS=0
56 /{THE N PARTITIONS ARE NUMBERED FROM 0 TO N-1}
57
58 /COMMON TASK NUMBERS - EDITED BY USER
59 /IT IS ADVISABLE TO DEFINE ALL TASKS HERE, NAMES GIVEN BELOW
60 /ARE USED BY SOME SYSTEM TASKS AND SHOULD BE DELETED FROM THIS
61 /LIST IF THE CORRESPONDING TASK IS NOT INCLUDED IN THE SYSTEM
62
63 0001 CLOCK=1
64 0002 PWRP=2
65 0003 TTY=3
66 0004 LPT=4
67 0005 MCR=5
68 0006 LTA=6
69 0007 DTA=7
70 0021 SWAPPER=21
71 0010 RKS=10
72 0011 RF00=11
73 0012 DF32=12
74 0013 CSA=13
75 0014 CSAF=14
76 0016 ICS=16
77 0017 RXBA=17
78 0023 OSB=NTASKS
79 0020 OSBF=20
80
81 /SOFTWARE PARAMETERS - EDITED BY USER
82
83 IFDEF OS8 <
84 0002 OSFLOS=2
85 0030 OSKBDV=30
86 0031 OSTTDV=31
87 0010 OSBSYSD=RKS
88 0004 OSFILL=4
89 >
90 IFDEF MCR <
91 0001 MCRSYS=1
92 >
93 IFDEF CLOCK <
94 0000 CLKTYP=0
95 0020 CLKQLN=20
96 DECIMAL
97 0170 HERTZ=120
98 0074 SHERTZ=60
99 OCTAL

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100
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      IFDEF SHAPPER <
0010 SYS=RK8
0000 SUNIT=0

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      /EQUIVALENCES:
7344 AC7776= CLL STA RAL
7346 AC7775= CLL STA RTL
7350 AC4000= CLA STL RAR
7350 AC3777= CLL STA RAR
7352 AC2000= CLA STL RTR
7356 AC0002= CLA STL RTL

      /MONITOR CALL VALUES:
4020 CAL= JMS 20 /CALL THE EXECUTIVE
5424 POSTDS= JMP I 24 /DISMISS AN INTERRUPT
4425 WAITM= JMS I 25 /WAIT FOR MULTIPLE EVENTS

      /NOTE: "*" MEANS CRITICAL VALUE MAY NOT
      /BE CHANGED WITHOUT MODIFYING SYSTEM CODE!!
0000 SEND= 0 /SEND MESSAGE
0001 RECEIV= 1 /RECEIVE MESSAGE
0002 WAITE= 2 /WAIT FOR EVENT FLAG
0003 RUN= 3 /CONTINUE TASK EXECUTION
0004 SUSPND= 4 /SUSPEND TASK EXECUTION
0005 POST= 5 /POST AN EVENT FLAG
0006 SKPINS= 6 /INSERT CODE INTO INTERRUPT SKIP CHAIN
0007 DERAIL= 7 /INITIATE END-ACTION
0010 BLKARG= 10 /BLOCK TASK FOR REASON SPECIFIED IN ARG
0011 SENDM= 11 /SEND MESSAGE AND WAIT
0012 UNBARG= 12 /UNBLOCK TASK FOR REASON SPECIFIED IN ARG
4000 FREE= 4000 /**FREE PARTITION

      IFDEF UDC <AO=0;DD=1;DI=2;GC=3;EC=4;RC=5
      DC=6;ECT=7;CS=10;OCT=11;AI=12>

      /TASK STATUS FLAGS:
4000 NONRWT= 4000 /**NONRESIDENT TASK WAIT
2000 EFWT= 2000 /EVENT FLAG WAIT
1000 RUNWT= 1000 /SCHEDULE WAIT
0400 SWPWT= 0400 /**SWAPPER WAIT
0200 EORHWT= 0200 /EVENT FLAG OR MESSAGE WAIT
0100 USERWT= 0100 /USER SPECIFIED WAIT
0040 ENABWT= 0040 /ENABLE WAIT
0020 MSGWT= 0020 /MESSAGE WAIT
0010 NETWT= 0010 /NETWORK WAIT (RESERVED FOR POSSIBLE FUTURE USE)
0001 DNEWT= 0001 /**DOES NOT EXIST WAIT

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150      /SYSTEM LOCATIONS:
151
152      1176 MSGTBL= 1200-2      /TASK MESSAGE TABLE
153      1244 T8TABL= NTASKS+2*2+MSGTBL-4      /TASK STATE TABLE = HOLDS
154      1367 TFTABL= NTASKS+2*4+T8TABL-1      /TASK LINK, UN, DP, IF, PC, AC, MQ
155      1414 RESTBL= TFTABL+NTASKS+2      /TASK FLAGS TABLE = HOLDS
156      1420 PARTBL= NTASKS+8*SWAPPER*2+RESTBL+387774      /TASK STATUS FLAGS
157      0043 COMMAND=43      /RESIDENCY TABLE
158      0035 TSWFLG= 35      /PARTITION TABLE
159      0036 TODL= 36      /SWAPPER COMMAND BUFFER
160      0037 TODH= 37
161      0040 OATE= 40
162      0041 MCREP= 41
163      0035 TSWFLG= 35      /TASK BY INHIBIT FLAG IN FIELD 0
164      0036 TODL= 36      /LOW ORDER TIME OF DAY IN FIELD 0
165      0037 TODH= 37      /HIGH ORDER TIME OF DAY IN FIELD 0
166      0040 OATE= 40      /DATE IN Q90 FORMAT IN FIELD 0
167      0041 MCREP= 41      /MCR START EVENT FLAG IN FIELD 0
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169      /TASK TABLE SETUP = "TASK", "CUR", "INIWT", AND "START"
170      /MUST BE DEFINED BY TASK:
171
172      01210 1210      *TASK*2+MSGTBL
173      01210 0000      ZBLOCK 2      /MESSAGE BUFFER INITIALLY CLEAR
174      01270 1270      *TASK*4+T8TABL
175      01270 0011      CURX10+CUR      /INITIAL FLAGS
176      01271 0011      START
177      01272 0000      0      /INITIAL AC 0
178      01374 1374      *TASK+TFTABL
179      01374 0000      INIWT
180      01246 1246      *TASK2*2+MSGTBL
181      01246 0000      ZBLOCK 2      /MESSAGE BUFFER INITIALLY CLEAR
182      01364 1364      *TASK2*4+T8TABL
183      01364 0011      CUR2X10+CUR2      /INITIAL FLAGS2
184      01365 0051      START2
185      01366 0000      0      /INITIAL AC 0
186      01413 1413      *TASK2+TFTABL
187      01413 0000      INIWT2

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/MCR FOR RT88 V2

8/30/74

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/ M. MURLEY / R. LARY

/THE MONITOR CONSOLE ROUTINE ALLOWS THE OPERATOR/PROGRAMMER OF AN
/RTS-8 SYSTEM TO CONTROL AND OBSERVE THE STATE OF THE SYSTEM
/THROUGH THE CONSOLE TELETYPE.

0005 TASK= MCR
0010 CUR= 10
0000 ININT= 0

IFNDEF MCRSYS <MCRSYS=1> /DEFAULT INCLUDES SYSTAT

/PARAMETERS FOR SOMEWHAT FANCIER NULL TASK WHICH COMES WITH MCR

0024 TASK2= NTASKS+1 /LOWEST PRIORITY TASK IN SYSTEM = UNADDRESSABLE
0010 CUR2= CUR /SAME FIELD AS MCR
0000 ININT2= 0 /COMES UP RUNNING

0052 INLENG= 52 /LENGTH OF INPUT BUFFER
0034 NHFIT= 34 /NUMBER OF NAMES WHICH CAN SHARE A PAGE WITH CODE

0001 FIELD CURX10

0100 0100 0100
10100 0112 ENRDLM, OLNER
10101 0120 ERRNUM, NUMER
10102 0104 ERRNAM, NAMER
10103 5400 GET, GETA
10104 0000 NUMB, 0 /GETN RESULT

10105 6000 ENDSTF, ENDS
10106 5460 BCKUP, BACKUP
10107 5436 LEGLIM, LEGAL
10110 5465 EOL, EOLA
10111 0000 ACL, 0 /2 WORD AC
10112 0000 ACH, 0
10113 0000 Q, 0 /ALL USAGE TEMPS
10114 0000 V, 0
10115 0000 P, 0
4516 PUTW= JMS I
5432 PUTWX

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272      5200      *MCRAYS=7600+5400
273      IPNDEF CLOCK <*,+600> /3 PAGES FOR CLOCK CODE
274      5400      IPNZRO NTASKS=NHFIT&4000 <*,+200> /SAVE NAME PG
275
276      /GET NEXT CHARACTER ROUTINE
277      /ADVANCE POINTER FOR NEXT GET
278
279      15400 0000 GETA, 0
280      15401 1604 TAD I IP
281      15402 2204 ISZ IP
282      15403 5600 JMP I GETA
283      15404 0000 IP, 0
284
285      /DETERMINES IF NEXT CHARACTER IS ALPHANETIC OR NUMERIC
286      /EXIT IF NOT; EXIT+1 IF ALPHA OR NUM
287
288      15405 0000 ALPHUM, 0
289      15406 4503 JMS I GET
290      15407 3113 DCA 0
291      15410 1113 TAD 0
292      15411 1377 TAD (-333
293      15412 7100 CLL
294      15413 1376 TAD (-32
295      15414 7630 BZL CLA /TEST FOR ALPHA
296      15415 2205 ISZ ALPHUM /BUMP RETURN IF ALPHA
297      15416 1113 TAD 0 /NOW TEST FOR NUMERIC
298      15417 4222 JMS ISITNM
299      15420 2205 ISZ ALPHUM
300      15421 5605 JMP I ALPHUM
301
302      /SEE IF CHARACTER IN AC IS NUMERAL
303      /EXIT IF IS; EXIT+1 IF NOT
304
305      15422 0000 ISITNM, 0
306      15423 1375 TAD (-9=1
307      15424 7100 CLL
308      15425 1374 TAD (-12 /CHECK FOR RANGE 260-271
309      15426 7420 SNL
310      15427 2222 ISZ ISITNM /BUMP RETURN ADDRESS IF NOT IN RANGE
311      15430 1373 TAD (-260 /RESTORE CHAR
312      15431 5622 JMP I ISITNM
313
314      15432 0000 PUTHX, 0 /ROUTINE TO STORE A WORD IN THE OUTPUT BUFFER
315      15433 3704 DCA I W
316      15434 2304 ISZ W
317      15435 5632 JMP I PUTHX

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318      /CHECK NEXT CHAR FOR TYPE OF DELIMITER
319      /EXIT= NOT CR,ALTMODE,SPACE, OR COMMA
320      /EXIT+1=CR OR ALTMODE
321      /EXIT+2=SPACE OR COMMA
322
323      15436 0000 LEGAL, 0
324      15437 4503 JMS I GET
325      15440 3113 DCA 0
326      15441 1113 TAD 0
327      15442 7141 CIA CLL
328      15443 7510 SPA /CR OR ALTMODE?
329      15444 5250 JMP NOCRAL /NO
330      15445 7264 STA CML RAL /GENERATE =2 IF CR, =1 IF ALTMODE
331      15446 3272 DCA CRALT
332      15447 5256 JMP ITSEOL
333      15450 1372 NOCRAL, TAD (-240 /BLANK?
334      15451 7440 STA
335      15452 1371 TAD (-",=240 /COMMA?
336      15453 7640 STA CLA
337      15454 5257 JMP NOGOOD /NEITHER
338      15455 2236 ISZ LEGAL /SPACE OR COMMA
339      15456 2236 ITSEOL, ISZ LEGAL /CR,ALT
340      15457 5636 NOGOOD, JMP I LEGAL
341
342      15460 0000 BACKUP, 0 /BACK UP INBUF POINTER BY 1 CHAR
343      15461 7240 CLA CMA
344      15462 1204 TAD IP
345      15463 3204 DCA IP
346      15464 5660 JMP I BACKUP
347
348      15465 0000 EOLA, 0 /SEARCH FOR C,R. OR ALTMODE
349      15466 4507 JMS I LEGLIM
350      15467 5300 JMP I ERRDLH /CRAP AT END OF LINE
351      15470 5665 JMP I EOLA
352      15471 5266 JMP EOLA+1
353
354      15472 0000 CRALT, 0

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355 15473 0000 TTOUT, 0
356 15474 4516 PUTH /TERMINATE LINE
357 15475 4020 CAL
358 15476 0011 SENDW
359 15477 0003 TTY /SEND MESSAGE TO TTY AND WAIT
360 15500 5505 EXMSG
361 15501 1370 TAD (E1MSG /INITIALIZE PCINTER FOR NEXT LINE
362 15502 3304 DCA W
363 15503 5673 JMP I TTOUT
364
365 15504 5512 W, E1MSG
366
367 15505 0000 EXMSG, ZBLOCK 3 /OUTPUT BUFFER SHARES SPACE WITH INPUT BUFFER
368 15510 0000 0
369 15511 0000 0
370 E1MSG,
371 15512 0000 INBUF, ZBLOCK INLENG /INPUT BUFFER
372 15570 5512
373 15571 0014
374 15572 0240
375 15573 0260
376 15574 0012
377 15575 7506
378 15576 0032
379 15577 7445
380 5600 PAGE

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381 /ROUTINE TO PARSE OFF A TASK NAME OR NUMBER
382
383 15600 5601 NAMEA, XNAME
384 15601 0000 XNAME, 0 /USED FOR TEMP STORAGE OF ACCUMULATED NAME
385 15602 0000 XNAME1, 0
386
387 15603 0000 GETTSK, 0 /THIS SUBR RETURNS TASK NUMBER IN "TSKWD"
388 15604 4232 JMS NAMGET
389 15605 5223 JMP NUMTSK
390 15606 4300 JMS NAMCOM /OK SO FAR,
391 /NOW CHECK FOR NAME DUPLICATION
392 15607 5502 JMP I ERRNAM
393 15610 1114 TAD V
394 15611 1377 TAD (NTASKS+1 /GET NUMBER ASSOC. WITH THIS NAME
395 15612 3277 GOTASK, DCA TSKWD /AND THAT'S THE TASK NUMBER
396 15613 1277 TAD TSKWD
397 15614 7041 CIA
398 15615 7100 CLL
399 15616 1376 TAD (NTASKS /MUST BE BETWEEN 1 + NTASKS
400 15617 7620 SNL CLA
401 15620 5501 JMP I ERRNUM
402 15621 1277 TAD TSKWD
403 15622 5603 JMP I GETTSK /RETURN WITH TASK NUMBER IN AC
404 15623 4506 JMS I BCKUP /IT'S A NUMBER - MUST BACK UP PTR
405 15624 4775 JMS I COCTNUM /SO GO ACCUMULATE IT
406 15625 4506 JMS I BCKUP
407 15626 4503 JMS I GET /GET DELIMITING CHAR
408 15627 7200 CLA
409 15630 1104 TAD NUMB
410 15631 5212 JMP GOTASK

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411 15632 0000 NAMGET, 0
412 15633 1200 TAD NAMEA
413 15634 3276 DCA G7
414 15635 7344 AC7776
415 15636 3275 DCA G3
416 15637 1374 TAD (4040
417 15640 3202 DCA XNAME1
418 15641 4773 JMS I (ALPNUM /ONLY ALPHAS + NUMBERS LEGAL
419 15642 5772 JMP I (CHRR
420 15643 1371 TAD (=300
421 15644 7710 SPA CLA /NAME OR NUMBER?
422 15645 5632 JMP I NAMGET /BY NUMBER
423 15646 2232 ISZ NAMGET
424 15647 1113 TAD 0
425 15650 0370 NXT, AND (77
426 15651 7126 STL RTL /40 IN LOW 6 BITS
427 15652 7006 RTL
428 15653 7006
429 15654 3676 DCA I G7
430 15655 4773 JMS I (ALPNUM
431 15656 5270 JMP ENDX /2ND CHAR IS NOT ALPHANUMERIC
432 15657 0370 AND (77
433 15660 1367 TAD (=40 /REMOVE LOW 40
434 15661 1676 TAD I G7
435 15662 3676 DCA I G7 /SAVE 1ST 2 CHARS
436 15663 2276 ISZ G7
437 15664 2275 ISZ G3 /4 CHARS YET?
438 15665 4773 JMS I (ALPNUM
439 15666 5270 JMP ENDX /3RD CHAR NON-ALPHANUMERIC
440 15667 5250 JMP NXT /GO TO 3RD+4TH CHARS
441 15670 4506 ENDX, JMS I BCKUP
442 15671 4507 END, JMS I LEGIM
443 15672 5271 JMP END
444 15673 7000 NDP
445 15674 5632 JMP I NAMGET
446
447 15675 0000 G3, 0
448 15676 0000 G7, 0
449 15677 0000 TSKWD, 0

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450 /COMPARE NAME IN XNAME WITH NMTBL, LOOKING FOR MATCHES.
451
452 15700 0000 NAMCDM, 0
453 15701 1366 TAD (NMTBL=1
454 15702 3115 DCA P
455 15703 1365 TAD (=NTASKS=1
456 15704 3114 DCA V
457 15705 2115 CHKMDR, ISZ P /UPDATE PAST UNNEED INFO
458 15706 2114 ISZ V /DONE?
459 15707 7410 SKP
460 15710 5700 JMP I NAMCDM /YES
461 15711 1515 TAD I P /GET 2 CHARACTERS FROM NMTBL
462 15712 2115 ISZ P
463 15713 7041 CIA
464 15714 1201 TAD XNAME /COMPARE TO NAME UNDER INVESTIGATION
465 15715 7640 BZA CLA
466 15716 5305 JMP CHKMDR /N.C. CONTINUE THRU NMTBL
467 15717 1202 TAD XNAME1 /TRY 2ND 2 CHARS FOR MATCH
468 15720 7041 CIA
469 15721 1515 TAD I P
470 15722 7640 BZA CLA
471 15723 5305 JMP CHKMDR /NOT CLOSE ENOUGH
472 15724 2300 ISZ NAMCDM /FOUND IT
473 15725 5700 JMP I NAMCDM

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474 /RUN THE REQUESTED TASK, TO SCHED FIRST
475
476 IFNDEF CLOCK <
477 SCHED, JMS GETTSK
478 >
479 15726 1277 REQUEST, IFDEF CLOCK <TAD TSKWD>
480 15727 4020 CAL
481 15730 0003 RUN
482 15731 5335 JMP BKELEN
483
484 /STOP THE REQUESTED TASK
485
486 15732 4203 STOP, JMS GETTSK
487 15733 4020 CAL
488 15734 0004 SUSPND
489 15735 4506 BKELEN, JMS I BCKUP
490 15736 4910 JMS I EOL
491 15737 5505 JMP I ENOSTP
492
493 /ENABLE A TASKS EXECUTION
494
495 15740 4203 ENABLE, JMS GETTSK
496 15741 4020 CAL
497 15742 0012 UNBARS /UNBLOCK THE TASK ON
498 15743 0040 ENABMT /ENABLE WAIT
499 15744 5335 JMP BKELEN /CLEAN UP
500
501 /DISABLE A TASKS EXECUTION
502
503 15745 4203 DISABL, JMS GETTSK
504 15746 4020 CAL
505 15747 0010 BLKARG /BLOCK THE TASK ON
506 15750 0040 ENABMT /ENABLE WAIT
507 15751 5335 JMP BKELEN /CLEAN UP
508 15765 7754
509 15766 6177
510 15767 7740
511 15770 0077
512 15771 7500
513 15772 6076
514 15773 5405
515 15774 4040
516 15775 6633
517 15776 0023
518 15777 0024
519 6000 PAGE

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520 /COMMAND CLEANUP AND NEW COMMAND FETCH
521
522 16000 2777 ENDS, ISZ I (CRALT /ALT=MODE EXIT?
523 16001 5211 JMP START /NO-CR EXIT
524 16002 6002 IOF /"WAITH" REQUIRES IOF ON ENTRY
525 16003 6203 COF CIF 0
526 16004 1376 TAD (4000+TASK
527 16005 3775 DCA I (MCREF
528 16006 6211 COF CUR /SUSPEND MCR ON 'C EVENT FLAG
529 16007 4425 WAITH /WITHOUT LETTING INTERRUPTS GO BACK ON!
530 16010 2000 EPMT
531 16011 4020 START, CAL
532 16012 0011 SENOW
533 16013 0003 TTY
534 16014 6043 MCRMB
535 16015 1247 TAD PINBUF
536 16016 3774 DCA I (IP
537 16017 3777 OCA I (CRALT
538 16020 4507 JMS I LEGIM /LOOK AT FIRST CHAR
539 16021 5224 JMP .+3 /SOMETHING USEFUL
540 16022 5505 JMP I ENDSTF /CR OR ALT = NULL. LINE
541 16023 5220 JMP .+3 /SPACE OR COMMA = KEEP LOOKING FOR MEAT
542 16024 4506 JMS I BCKUP /FOUND MEAT = BACK UP OVER IT
543 16025 4773 JMS I (NAMGET /GET COMMAND NAME
544 16026 5502 JMP I ERRNAM
545 16027 1372 TAD (CMDLST=1
546 16030 3115 OCA P
547 16031 2115 CMDLP, ISZ I
548 16032 1515 TAD I P /GET 1ST 2 CHARS OF A COMMAND
549 16033 2115 ISZ P
550 16034 7440 SZL /0 TERMINATES COMMAND LIST
551 16035 1771 TAD I (XNAME
552 16036 7640 SZL /A MATCH?
553 16037 5231 JMP CMDLP /NO-TRY AGAIN
554 16040 1515 TAD I P /YES = GET COMMAND DISPATCH ADDRESS
555 16041 3115 OCA P
556 16042 5515 JMP I P /WE'RE ON OUR WAY
557
558 16043 0000 MCRMB, ZBLOCK 3
559 16046 2052 2000+INLENG
560 16047 5512 PINBUF, INBUF
561 16050 7600 L7600, TEXT />/
562
563 16051 1250 START2, TAD L7600 /R3X=110 STYLE NULL TASK
564 16052 2262 BKGLP, ISZ
565 16053 2262 ISZ
566 16054 2262 ISZ
567 16055 2262 ISZ
568 16056 2262 ISZ
569 16057 5252 JMP BKGLP
570 16060 7010 RAR
571 16061 5252 JMP BKGLP
572 16062 0000 BKGLT, 0

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573 16063 0000  ERMSG, ZBLOCK 3  /STANDARD MESSAGE HEADER
574 16066 1000  1000  /SIXBIT MESSAGE, END WITH CR/LF, INDIRECT
575 16067 0000  0  /NO INPUT
576 16070 0000  ERRA, 0  /JMS PUTS POINTER TO ERROR MESSAGE HERE
577 16071 4020  CAL  /AC RANDOM BUT IRRELEVANT
578 16072 0011  SENDH
579 16073 0003  TTY
580 16074 6063  ERMSG
581 16075 5211  JMP START
582
583 16076 4270  CHRER, JMS ERRA
584 16077 0201  TEXT /BAD CHAR/
585 16100 0440
586 16101 0310
587 16102 0122
588 16103 0000
589 16104 4270  NAMER, JMS ERRA
590 16105 0201  TEXT /BAD NAME/
591 16106 0440
592 16107 1601
593 16110 1503
594 16111 0000
595 16112 4270  DLNER, JMS ERRA
596 16113 0201  TEXT /BAD DELIM/
597 16114 0440
598 16115 0403
599 16116 1411
600 16117 1500
601 16120 4270  NUMER, JMS ERRA
602 16121 0201  TEXT /BAD NUMBER/
603 16122 0440
604 16123 1623
605 16124 1502
606 16125 0522
607 16126 0000

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608 /COMMAND LIST = FORMAT OF LIST IS:
609 / NAME
610 / OVERLAY NO.
611 / ST. ADDR. IN OVERLAY
612
613 16127 5454  CMDLST, =2324/ STOP /STOP
614 16130 5732
615 16131 7262  =0516/ ENABLE /ENABLE
616 16132 5740
617 16133 7367  =0411/ DISABL /DISABLE
618 16134 5745
619 16135 6177  =1601/ NAME /NAME
620 16136 6246
621
622 16137 7377  IPDEF CLOCK <
623 16140 7200  =0401/ DATEX /DATE
624 16141 5367  =2411/ TIME /TIME
625 16142 7000
626 16143 7477  =0301/ CANCEL /CANCEL
627 16144 7450
628
629 16145 5573  =2205/ SCHED /REQUEST
630 16146 7400
631 16147 6060  =1720/ EXAM /OPEN
632 16150 6726
633 16151 7373  =0405/ DEPOSIT /DEPOSIT
634 16152 6670
635 16153 5761  =2017/ POSTEP /POST
636 16154 6714
637
638 16155 5447  IFNZRD MCRSY0 <
639 16156 6400  =2331/ SYSTAT /SYSTAT
640
641 16157 7250  =0530/ EXIT /EXIT
642 16160 6273
643 16161 0000  0/ NAMER /END OF LIST
644 16162 6104
645 16171 5601
646 16172 6126
647 16173 5632
648 16174 5404
649 16175 0041
650 16176 4003
651 16177 5472
652 16178 6200

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653 /FORMAT OF NMTBL IS 2 WORDS OF 4 6-BIT CHARS
654 /ORDERED BY NUMBER OF TASK AFFILIATED WITH THAT NAME
655 /NAMES MUST BE PADDED WITH BLANKS!
656
657 16200 0000 NMTBL, ZBLOCK NTASKS*2
658 6176 NAMES, NMTBL=2
659
660 6210 *MCR*2+NAMES
661 16210 1503 1503/ 2240 /MCR
662 16211 2240
663 IFDEF TTY <
664 6204 *TTY*2+NAMES
665 16204 2424 2424/ 3140 /TTY
666 16205 3140
667
668 >
669 6200 IFDEF CLOCK <
670 16200 0314 *CLOCK*2+NAMES
671 16201 0313 DEVICE CLK
672
673 >
674 6216 IFDEF RK8 <
675 16216 2213 *RK8*2+NAMES
676 16217 7040 2213/ 7040 /RK8
677
678 >
679 6214 IFDEF DTA <
680 16214 0424 *DTA*2+NAMES
681 16215 0140 0424/ 0140 /DTA
682
683 >
684 6240 IFDEF SHAPPER <
685 16240 2327 *SHAPPER*2+NAMES
686 16241 0120 DEVICE SHAP
687
688 >

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688 /NAME TABLE CONTINUED
689
690 IFDEF RF08 <
691 6220 *RF08*2+NAMES
692 16220 2206 DEVICE RF08
693 16221 6070
694
695 >
696 6224 IFDEF CSA <
697 16224 0323 *CSA*2+NAMES
698 16225 0140 0323/0140 /CSA
699
700 >
701 6226 IFDEF CSAF <
702 16226 0323 *CSAF*2+NAMES
703 16227 0106 DEVICE CSAF
704
705 >
706 6226 IFDEF UDC <
707 16226 0323 *UDC*2+NAMES
708 16227 0106 2504/0340 /UDC
709
710 >
711 6236 IFDEF OS8F <
712 16236 1723 *OS8F*2+NAMES
713 16237 7006 DEVICE OS8F
714
715 >
716 6244 IFDEF OS8 <
717 16244 1723 *OS8*2+NAMES
718 16245 7040 1723/ 7040 /OS8
719
720 >
721 6206 IFDEF LPT <
722 16206 1420 *LPT*2+NAMES
723 16207 2440 1420/2440 /LPT
724
725 >
726 6202 IFDEF PWRP <
727 16202 2027 *PWRP*2+NAMES
728 16203 2206 DEVICE PWRP
729
730 >
731 6212 IFDEF LTA <
732 16212 1424 *LTA*2+NAMES
733 16213 0140 1424/0140 /LTA
734
735 >
736 6234 IFDEF RX8A <
737 16234 2230 *RX8A*2+NAMES
738 16235 7001 DEVICE RX8A
739
740 >
741 IFDEF RX8B <
742 *RX8B*2+NAMES

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743      DEVICE RX88
744      >
745      IFDEF RX8C <
746      *RX8C*2+NAME8
747      DEVICE RX8C
748      >
749
750      IFDEF RX8D <
751      *RX8D*2+NAME8
752      DEVICE RX8D
753      >
754
755      *NTASK8*2+NMHTBL /ORIGIN TO END OF TABLE
756      IFZERO NTASK8=NMFIT84888 <PAGE> /CAN'T FIT IN WITH CODE
757

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758      /ASSOCIATE A NAME WITH A TASK NUMBER
759
760      16246 4777 NAME, JMS I (GETTSK /GET TASK NUMBER TO GIVE THIS NAME TO
761      16247 7184 RAL CLL /INDEX INTO NMHTL
762      16250 1376 TAD (NAME8
763      16251 3112 DCA ACH
764      16252 4506 JMS I BCKUP
765      16253 4507 JMS I LEGLIM
766      16254 5500 JMP I ERRDLH
767      16255 5500 JMP I ERRDLH /NO CR BEFORE NUMBER
768      16256 4775 JMS I (NAME8
769      16257 5502 JMP I ERRNAM
770      16260 4774 JMS I (NAMCOM /CHECK FOR DUPLICATION OF NAMES
771      16261 7410 SKP
772      16262 5502 JMP I ERRNAM /BAD NAME = ALREADY EXISTS
773      16263 4506 JMS I BCKUP
774      16264 4510 JMS I EOL
775      16265 1773 TAD I (XNAME
776      16266 3512 DCA I ACH /1 WORD
777      16267 2112 ISZ ACH
778      16270 1772 TAD I (XNAME1
779      16271 3512 DCA I ACH /THEN THE OTHER
780      16272 5505 JMP I ENDSTF
781
782      16273 1772 EXIT, TAD I (XNAME1
783      16274 1371 TAD (=1124 /VERIFY THAT "EXIT" WAS TYPED
784      16275 7640 SZA CLA
785      16276 5770 JMP I (EXAM /OTHERWISE ASSUME USER MEANT "EXAMINE"
786      16277 6201 CDF 0
787      16300 3767 DCA I (TSMFLG /INHIBIT TASK SWITCHING
788      16301 2114 ISZ V
789      16302 5301 JMP .-1 /ALLOW (MOST) I/O TO COMPLETE
790      16303 2311 ISZ EXDLAY
791      16304 5301 JMP .-3
792      16305 6002 IOF
793      16306 6007 IFNZRD POPBE <CAF>
794      16307 6203 CDF CIF 0
795      16310 5766 JMP I (7600
796
797      16311 7720 EXDLAY, =68

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798 16312 0000 PRI2BT, 0 /PRINT 2 3-BIT NUMBERS
799 16313 3113 DCA Q
800 16314 1113 TAD Q
801 16315 7112 CLL RTR
802 16316 7012 RTR
803 16317 7012 RTR
804 16320 4324 JMS PRNTNM /PASS 2 DIGIT NO.
805 16321 1113 TAD Q
806 16322 4324 JMS PRNTNM /PASS LAST 2 DIGITS
807 16323 5712 JMP I PRI2BT
808
809 16324 0000 PRNTNM, 0
810 16325 0365 AND (77
811 16326 3114 DCA V
812 16327 1114 TAD V
813 16330 7100 CLL RTL
814 16331 7004 RAL
815 16332 0364 AND (707 /GET LEFT DIGIT
816 16333 1114 TAD V
817 16334 0364 AND (707 /RIGHT DIGIT
818 16335 1363 TAD (0060
819 16336 4516 PUTM
820 16337 5724 JMP I PRNTNM
821 16363 0060
822 16364 0707
823 16365 0077
824 16366 7600
825 16367 0033
826 16370 6720
827 16371 6654
828 16372 5602
829 16373 5601
830 16374 5700
831 16375 5632
832 16376 6176
833 16377 5603
834 PAGE 6400

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835 IFNZRO MCRSYS 4
836 /PRINT A STATUS TABLE
837 /FORMAT IS: NO. OF TASK
838 / AFFILIATED NAME IF ANY
839 / STATE OF FLAGS:
840 / E= EVENT M= MESSAGE
841 / S= SWAP R= RUN
842 / U= USER D= DISABLED
843 / O= EVENT OR MESSAGE
844
845 16400 3114 SYSTAT, DCA V
846 16401 4506 JMS I BCKUP
847 16402 4507 JMS I LEGLIM
848 16403 5500 JMP I ERRDLM
849 16404 5211 JMP FULSYS /NO ARGS = DO FOR ALL TASKS, NO STATE
850 16405 4777 JMS I (GETTSK /DELIMITER = GET TASK ID
851 16406 3114 DCA V
852 16407 3115 DCA P /SET FOR ONE TASK, WITH STATE
853 16410 5214 JMP ONETSK
854 16411 1376 FULSYS, TAD (=NTASKS
855 16412 3115 DCA P /=MAX. NO. ENTRIES
856 16413 2114 UPCHCK, ISZ V
857 16414 1375 ONETSK, TAD (TFTABL
858 16415 1114 TAD V
859 16416 3334 DCA ST2 /INDEX INTO FLAG TABLE
860 16417 6201 CDF 0
861 16420 1734 TAD I ST2 /GET JFTABL WORD
862 16421 6211 CDF CUR
863 16422 3334 DCA ST2
864 16423 1334 TAD ST2 /LO BIT=1 MEANS NOT ACTIVE
865 16424 7110 RAR CLL
866 16425 7630 SZL CLA
867 16426 5321 JMP NXTTSK /MOVE ON TO NEXT TASK
868 16427 1114 TAD V /PRINT TASK NO.
869 16430 4774 JMS I (PRNTNM
870 16431 4326 JMS SYSOUT
871 16432 1114 TAD V
872 16433 7104 CLL RAL
873 16434 1373 TAD (NAMES /INDEX INTO NAME TABLE
874 16435 3333 DCA ST1
875 16436 1733 TAD I ST1
876 16437 4326 JMS SYSOUT /ADD NAME TO WRITE BUFFER
877 16440 2333 ISZ ST1
878 16441 1733 TAD I ST1
879 16442 4326 JMS SYSOUT

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880      /INSERT TASK WAIT CODES INTO LINE
881
882      16443 1372      TAD      (FLGTBL-1
883      16444 3333      DCA      ST1      /DECODE WAIT CODE
884      16445 2333      FLGLP,  ISZ      ST1
885      16446 1733      TAD I      ST1      /GET NEXT TABLE ENTRY
886      16447 2333      ISZ      ST1
887      16450 7450      SNA
888      16451 5260      JMP      NOMOPG      /ZERO ENDS TABLE
889      16452 0334      AND      ST2      /IF WE ARE WAITING ON THIS CODE,
890      16453 7650      SNA CLA      /WE WILL PUT THE CORRESPONDING CODE LETTER OUT
891      16454 5245      JMP      FLGLP
892      16455 1733      TAD I      ST1
893      16456 4516      PUTH
894      16457 5245      JMP      FLGLP
895      16460 1114      NOMOPG, TAD      V
896      16461 7104      CLL RAL
897      16462 1371      TAD      (MSGTBL
898      16463 3113      DCA      Q
899      16464 0201      CDF      Q
900      16465 1513      TAD I      Q
901      16466 6211      CDF      CUR
902      16467 7650      SNA CLA
903      16470 5273      JMP      ,+3
904      16471 1370      TAD      (4052
905      16472 4516      PUTH
906      16473 1115      TAD      P
907      16474 7640      SZA CLA
908      16475 5320      JMP      NODTL
909      16476 1367      TAO      (-4
910      16477 3334      DCA      ST2
911      16500 1114      TAD      V      /PRINT 4 WORDS FROM TASK STATE TABLE ENTRY
912      16501 7106      CLL RTL      /FOR THIS TASK
913      16502 1366      TAD      (TSTABL
914      16503 3333      DCA      ST1
915      16504 4326      JMS      SYSOUT
916      16505 1333      TAD      ST1
917      16506 4765      JMS I      (PR120T /PRINT LOCATION OF JOB STATE TABLE ENTRY
918      16507 1364      TAD      (7240 /FOLLOWED BY COLON, SPACE
919      16510 4326      PROTL, JMS      SYSOUT
920      16511 0201      CDF      Q
921      16512 1733      TAD I      ST1
922      16513 6211      CDF      CUR
923      16514 4765      JMS I      (PR120T
924      16515 2333      ISZ      ST1
925      16516 2334      ISZ      ST2
926      16517 5310      JMP      PROTL

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927      16520 4763      NODTL, JMS I      (YTOUT /SEND MESSAGE TO TTY
928      16521 2115      NXTTBL, ISZ      P      /END OF TABLE?
929      16522 1115      TAD      P
930      16523 7710      SNA CLA
931      16524 5213      JMP      UPCHCK /NO
932      16525 5505      JMP I      ENDSTF /YES = GO AWAY
933
934      16526 0000      SYSOUT, Q
935      16527 7450      SNA
936      16530 1362      TAD      (4040 /PRINT CONTENTS OF AC
937      16531 4516      PUTH      /OR BLANKS,
938      16532 5726      JMP I      SYSOUT
939
940      16533 0000      ST1,      Q
941      16534 0000      ST2,      Q
942
943      16535 0020      FLGTBL, MSGWT; 4015 /M
944      16536 4015
945      16537 2000      EPWT; 4005 /E
946      16540 4005
947      16541 1000      RUNWT; 4022 /R
948      16542 4022
949      16543 0400      SHPWT; 4023 /S
950      16544 4023
951      16545 0100      USERWT; 4025 /U
952      16546 4025
953      16547 0040      ENABWT; 4004 /D
954      16550 4004
955      16551 0200      EORMWT; 4017 /O
956      16552 4017
957      16553 4000      NONRWT; 4016 /N
958      16554 4016
959      16555 0000      Q
960      16562 4040
961      16563 5473
962      16564 7240
963      16565 6312
964      16566 1244
965      16567 7774
966      16570 4052
967      16571 1176
968      16572 6534
969      16573 6176
970      16574 6324
971      16575 1367
972      16576 7755
973      16577 5603
974      6600
975

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976 /GET 2 OCTAL NUMBERS
977
978 16600 0000 GET2OC, 0
979 16601 4233 JMS OCTNUM /GO GET A NUMBER
980 16602 5216 JMP ISITDN /LESS THAN 4 DIGITS
981 16603 1104 TAD NUMB /5TH IS FIELD
982 16604 7112 CLL RTR
983 16605 7012 RTR
984 16606 7012 RTR
985 16607 0377 AND (70
986 16610 3267 DCA G2A /SAVE FIELD POINTER IN CASE 5TH DIGIT SHOWS
987 16611 4247 JMS DB7 /TRY FOR 5 DIGITS
988 16612 5216 JMP ISITDN /BE CONTENT WITH 4
989 16613 4503 JMS I GET
990 16614 7200 CLA /WASTE A CHAR - THE DELIM
991 16615 1267 TAD G2A /USE THE FIELD WE SAVED
992 16616 1376 ISITDN, TAD (CDF 0 /AC MAY NOT BE 0 HERE!
993 16617 3362 DCA GFLD /SAVE CDF TO FIELD
994 16620 1104 TAD NUMB
995 16621 3267 DCA G2A /THIS IS 4 DIGIT NUMBER
996 16622 4506 JMS I BCKUP
997 16623 4507 JMS I LEGLIM
998 16624 5500 JMP I ERRDLN
999 16625 5600 JMP I GET2OC /LEGAL EOL=ONLY 1 NUMBER
1000 16626 4233 JMS OCTNUM /TRY FOR A 2ND
1001 16627 4506 JMS I BCKUP
1002 16630 1104 TAD NUMB
1003 16631 2200 ISZ GET2OC
1004 16632 5600 JMP I GET2OC /UPDATE RETURN + PASS 2ND NUMBER IN AC

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1005 16633 0000 OCTNUM, 0
1006 16634 7346 AC7775
1007 16635 3114 DCA V
1008 16636 3104 DCA NUMB /INITIALIZE NUMBER
1009 16637 4247 JMS DB7 /GET A DIGIT
1010 16640 5501 JMP I ERRNUM
1011 16641 4247 TWOMOR, JMS DB7 /CAN HAVE UP TO 4 DIGITS
1012 16642 5633 JMP I OCTNUM /L.T. 4
1013 16643 2114 ISZ V
1014 16644 5241 JMP TWOMOR
1015 16645 2233 ISZ OCTNUM /4 DIGITS
1016 16646 5633 JMP I OCTNUM
1017
1018 /DIGIT MUST BE OCTAL=USE ONLY 3 BITS
1019
1020 16647 0000 DB7, 0
1021 16650 4503 JMS I GET
1022 16651 1375 TAD (=270
1023 16652 7100 CLL
1024 16653 1374 TAD (10
1025 16654 3305 DCA BUMP /SAVE DIGIT VALUE
1026 16655 7420 SNL
1027 16656 5647 JMP I DB7 /NOT DIGIT AFTER ALL - NON-SKIP RETURN
1028 16657 1104 TAD NUMB
1029 16660 7104 CLL RAL
1030 16661 7104 CLL RAL
1031 16662 7104 CLL RAL /NUMB=8
1032 16663 1305 TAD BUMP
1033 16664 3104 DCA NUMB
1034 16665 2247 ISZ DB7 /TAKE SKIP RETURN
1035 16666 5647 JMP I DB7
1036 16667 0000 G2A, 0

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1037      /DEPOSIT IN LOCATION SPECIFIED CONTENTS
1038
1039 16670 4200 DEPOSIT, JMS GET20C
1040 16671 5501      JMP I ERRNUM /MUST HAVE 2 NUMBERS
1041 16672 4361 DEPSLP, JMS XFLO /SET FIELD
1042 16673 3667      OCA I G2A /ADD IN NEW CONTENTS
1043 16674 6211      CDF CUR
1044 16675 4507      JMS I LEGLIM
1045 16676 5500      JMP I ERROLH
1046 16677 5505      JMP I ENDSTF
1047 16700 4233      JMS DCTNUM /MAY BE MORE CONTENTS
1048 16701 4506      JMS I BCKUP
1049 16702 4305      JMS BUMP /BUMP LOCATION POINTER
1050 16703 1104      TAD NUMB
1051 16704 5272      JMP DEPSLP
1052
1053 16705 0000 BUMP, 0 /ROUTINE TO BUMP G2A
1054 16706 2267      ISZ G2A
1055 16707 5705      JMP I BUMP /AH, NICE AND SIMPLE
1056 16710 1374      TAD (10
1057 16711 1362      TAD GFLO /ACROSS FIELD BOUNDARY
1058 16712 3362      OCA GFLO
1059 16713 5705      JMP I BUMP
1060
1061      /POST EVENT FLAG GIVEN ADDRESS
1062
1063 16714 4200 POSTEF, JMS GET20C /GET 5-DIGIT ADDRESS
1064 16715 7410      SKP /SHOULD BE ONLY 1 NUMBER
1065 16716 5501      JMP I ERRNUM /MORE IS ERROR
1066 16717 1362      TAD GFLO
1067 16720 3324      OCA POSTOF
1068 16721 1267      TAD G2A
1069 16722 4020      CAL
1070 16723 0005      POST /PRAY WHAT WE ARE POSTING IS REALLY
1071 16724 7402 POSTOF, HLT /AN EVENT FLAG
1072 16725 5505      JMP I ENDSTF

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1073      /EXAMINE LOCATION OR RANGE OF LOCATIONS
1074
1075 16726 4200 EXAM, JMS GET20C /GET OCTAL VALUES
1076 16727 4506      JMS I BCKUP /NO SECOND NUMBER = EXAMINE ONLY 1 LOC
1077 16730 7450      SNA /IF 2D NUM IS ZERO,
1078 16731 7001      IAC /EXAMINE ONLY 1 LOC
1079 16732 7041      CIA
1080 16733 3360      OCA LSTCNT /- NO. OF LOCATIONS TO EXAM
1081 16734 4510      JMS I EOL
1082 16735 1362 PRNCON, TAD GFLO /GFLO SET BY GET20C
1083 16736 0377      AND (70
1084 16737 7112      CLL RTR
1085 16740 7010      RAR
1086 16741 1373      TAD (4060 /SPACE, NUMBER
1087 16742 4516      PUTW
1088 16743 1267      TAD G2A
1089 16744 4772      JMS I (PR12BT /PRINT THE LOCATION NEXT
1090 16745 1371      TAD (5740 /PRINT A SLASH BEFORE CONTENTS
1091 16746 4516      PUTW
1092 16747 4361      JMS XFLO /SET FIELD
1093 16750 1667      TAD I G2A /GET CONTENTS
1094 16751 6211      CDF CUR
1095 16752 4772      JMS I (PR12BT /PRINT IT
1096 16753 4305      JMS BUMP
1097 16754 4770      JMS I (TTOUT /OUTPUT A LINE
1098 16755 2360      ISZ LSTCNT /DONE?
1099 16756 5335      JMP PRNCON /NO = DO SOME MORE
1100 16757 5505      JMP I ENDSTF
1101 16760 0000 LSTCNT, 0
1102
1103 16761 0000 XFLO, 0
1104 16762 7402 GFLO, HLT
1105 16763 5761      JMP I XFLO
1106 16770 5473
1107 16771 5740
1108 16772 6312
1109 16773 4060
1110 16774 0010
1111 16775 7510
1112 16776 6201
1113 16777 0070
1114      7000

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1115          IFDEF  CLOCK  4
1116
1117 17000 1777 TIME, TAD I (CRALT
1118 17001 7640      SZA  CLA
1119 17002 5216      JMP  PRNTH /PRINT TIME
1120 17003 4776 DOTIME, JMS I (HRMIN /DECODE HOURS + MINS
1121 17004 1777      TAD I (CRALT
1122 17005 7650      SNA CLA
1123 17006 4510      JMS I  EOL
1124 17007 1111      TAD  ACL
1125 17010 6203      CDF CIF 0 /INHIBIT INTERRUPTS BETWEEN HALVES
1126 17011 3775      DCA I (TODL
1127 17012 1112      TAD  ACH
1128 17013 3774      DCA I (TODH
1129 17014 6213      CDF CIF CUR
1130 17015 5505      JMP I  ENDSTF
1131 17016 3773 PRNTH, DCA I (P1
1132 17017 3261      DCA  HRS
1133 17020 3262      DCA  MINS /CONVERT TOD TO HOURS:MINUTES
1134 17021 6002      IOP  /INHIBIT INTERRUPTS BETWEEN HALVES
1135 17022 6201      CDF 0
1136 17023 1775      TAD I (TODL
1137 17024 3111      DCA  ACL
1138 17025 1774      TAD I (TODH /GET TIME OF DAY FROM PAGE 0 OF FIELD 0
1139 17026 3112      DCA  ACH
1140 17027 6001      ION  /RE=ENABLE INTERRUPTS
1141 17030 6211      CDF CUR
1142 17031 1372      TAD  (FUDGE
1143 17032 4277      JMS  DBLSUB /TAKE OFF THE MIDNIGHT FUDGE
1144 17033 1371      HRLOP, TAD  (HRCON /SUBTRACT HRS TIL OVERFLO
1145 17034 4277      JMS  DBLSUB
1146 17035 2261      ISZ  HRS
1147 17036 1112      TAD  ACH
1148 17037 7700      SNA CLA /AC GOES NEGATIVE ON OVERFLOW
1149 17040 5233      JMP  HRLOP
1150 17041 1370 MINLOP, TAD  (MINCON
1151 17042 4263      JMS  DBLADD
1152 17043 2262      ISZ  MINS
1153 17044 1112      TAD  ACH
1154 17045 7710      SPA CLA /THIS TIME AC GOES POSITIVE ON OVERFLOW
1155 17046 5241      JMP  MINLOP
1156 17047 7240      STA
1157 17050 1261      TAD  HRS
1158 17051 4767      JMS I (PR4BIT
1159 17052 2773      ISZ I (P1 /MINS SPLIT BET WORDS
1160 17053 1262      TAD  MINS
1161 17054 7041      CIA
1162 17055 1360      TAD  (74
1163 17056 4767      JMS I (PR4BIT
1164 17057 4765      JMS I (TOUT
1165 17060 5505      JMP I  ENDSTF
1166 17061 0000 HRS, 0
1167 17062 0000 MINS, 0

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1168 17063 0000 DBLADD, 0 /DOUBLE PRECISION ADD ROUTINE
1169 17064 3113      DCA  Q
1170 17065 7100      CLL
1171 17066 1513      TAD I  Q
1172 17067 1111      TAD  ACL
1173 17070 3111      DCA  ACL
1174 17071 2113      ISZ  Q /PREPARE FOR HI WORD
1175 17072 7004      RAL  /UPDATE HI WORD
1176 17073 1112      TAD  ACH
1177 17074 1513      TAD I  Q
1178 17075 3112      DCA  ACH
1179 17076 5663      JMP I  DBLADD
1180
1181 17077 0000 DBLSUB, 0 /** CAN BE CALLED WITH DF=CUR OR DF=0 **
1182 17100 3113      DCA  Q
1183 17101 6212      CIF CUR /INHIBIT INTERRUPTS BETWEEN HALVES
1184 17102 1513      TAD I  Q /GET LO VALUE
1185 17103 7141      CIA CLL
1186 17104 1111      TAD  ACL
1187 17105 3111      DCA  ACL
1188 17106 2113      ISZ  Q /UPDATE FOR HI VALUE
1189 17107 7024      CHL RAL
1190 17110 1513      TAD I  Q
1191 17111 7041      CIA
1192 17112 1112      TAD  ACH
1193 17113 3112      DCA  ACH
1194 17114 5677      JMP I  DBLSUB
1195
1196 17115 0000 GETN, 0 /GET A NUMBER ROUTINE
1197 17116 3104      DCA  NUMB /INITIALIZE NUMBER TO 0
1198 17117 4503 PSTSPC, JMS I  GET
1199 17120 4764      JMS I (ISITNM /DIGIT?
1200 17121 5332      JMP  VSITIS /YES - GO BUILD NUMBER
1201 17122 1363      TAD  (-240
1202 17123 7650      SNA CLA
1203 17124 5317      JMP  PSTSPC /PERMIT LEADING SPACES
1204 17125 5501      JMP I  ERRNUM
1205 17126 4503 GETNXL, JMS I  GET
1206 17127 4764      JMS I (ISITNM
1207 17130 7410      SKP
1208 17131 5715      JMP I  GETN /RETURN WITH DELIMITER IN AC
1209 17132 1362      VSITIS, TAD  (-260
1210 17133 3343      DCA  DIG
1211 17134 1104      TAD  NUMB
1212 17135 7106      CLL RTL
1213 17136 1104      TAD  NUMB
1214 17137 7004      RAL  /NUMBER SO FAR *10
1215 17140 1343      TAD  DIG /* NEW NUMBER
1216 17141 3104      DCA  NUMB
1217 17142 5326      JMP  GETNXL
1218 17143 0000 DIG, 0

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1219 /THIS TABLE CONTAINS THE CONVERSION FACTORS FOR HOURS,
1220 /MINUTES & SECONDS TO TICKS, EACH IS A 2 WORD VALUE
1221 /BECAUSE ALL THIS IS DONE BY DOUBLE WORD ARITHMETIC,
1222 /THE HOUR TO TICKS VALUE = 60*60*SHERTZ = 7020(OCT)*SHERTZ
1223 /THE LOW WORD VALUE IS DETERMINED FOR THIS MULTIPLICATION
1224 /BY THE ASSEMBLER,
1225 /THE HIGH WORD IS (7020*SHERTZ)/10000,
1226 /THIS MUST BE REDUCED FOR THE ASSEMBLER,
1227 /IT IS = 341*SHERTZ/400 = 340*SHERTZ/400+SHERTZ/400 =
1228 / 7*SHERTZ/10+SHERTZ/400 = (7*SHERTZ+8*SHERTZ/40)/10
1229
1230 17144 0310 INTTBL, "H
1231 17145 5700 HRCON, 7020*SHERTZ
1232 0001 HRCTEM= 8SHERTZX40
1233 17146 0064 HRCON1, 7*SHERTZ+HRCTEMX10
1234
1235 17147 0315 "H
1236 17150 7020 MINCON, 74*SHERTZ
1237 17151 0000 MINCN1, 17*SHERTZX2000
1238
1239 17152 0323 "S
1240 17153 0074 SECCON, SHERTZ
1241 17154 0000 0
1242
1243 17155 0324 "T
1244 17156 0001 TICCON, 1
1245 17157 0000 0
1246
1247 17160 0000 0 /EOT
1248 17162 7520
1249 17163 7540
1250 17164 5422
1251 17165 5473
1252 17166 0074
1253 17167 7302
1254 17170 7150
1255 17171 7145
1256 17172 7525
1257 17173 7275
1258 17174 0037
1259 17175 0036
1260 17176 7527
1261 17177 5472
1262 17200 7200 PAGE

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1263 17200 1777 DATEX, TAD I (CRALT
1264 17201 7640 SZA CLA /PRINT OR GET?
1265 17202 5244 JMP PRNTOT /PRINT DATE
1266 17203 3243 DCA DATEWD /WHERE WILL THIS BE??
1267 17204 4234 JMS GETNXT /GET MONTH
1268 17205 0376 AND (17
1269 17206 7112 CLL RTR
1270 17207 7012 RTR
1271 17210 7010 RAR
1272 17211 3243 DCA DATEWD /IN STANDARD OS/8 FORMAT
1273 17212 4234 JMS GETNXT /HERE COMES DAY
1274 17213 0375 AND (37
1275 17214 7106 CLL RTL
1276 17215 7004 HAL
1277 17216 1243 TAD DATEWD
1278 17217 3243 DCA DATEWD
1279 17220 4774 JMS I (GETN /FOLLOWED BY YEAR
1280 17221 7200 CLA
1281 17222 1775 TAD I (DIG /OF WHICH WE TAKE ONLY LAST DIGIT
1282 17223 1243 TAD DATEWD
1283 17224 6201 CDF 0
1284 17225 3772 DCA I (DATE
1285 17226 6211 CDF CUR
1286 17227 4506 JMS I BCKUP
1287 17230 4507 JMS I LEGTIM
1288 17231 5500 JMP I ERNDLM
1289 17232 5505 JMP I ENOSTF
1290 17233 5771 JMP I (DDTIME /MAY BE FOLLOWED BY TIME

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1291 17234 0000 GETNXT, 0
1292 17235 4774 JMS I (GETN
1293 17236 1370 TAD (=257
1294 17237 7640 SZA CLA /USE / AS DELIM FOR DATE
1295 17240 5500 JMP I ERRDLN
1296 17241 1104 TAD NUMB
1297 17242 5634 JMP I GETNXT
1298 17243 0000 DATEWD, 0
1299
1300 17244 3275 PRNTOT, DCA P1
1301 17245 6201 COF 0
1302 17246 1772 TAD I (DATE
1303 17247 6211 COF CUR
1304 17250 3243 DCA DATEWD /SAVE CURRENT DATE
1305 17251 1243 TAD DATEWD
1306 17252 0367 AND (7400 /GET MONTH
1307 17253 7106 CLL RTL
1308 17254 7006 RTL
1309 17255 7004 RAL
1310 17256 4302 JMS PR4BIT
1311 17257 7240 CLA CMA
1312 17260 3275 DCA P1 /DAY WILL BE SPLIT BET 2 BUFFER WORDS
1313 17261 1243 TAD DATEWD
1314 17262 0366 AND (370 /GET MONTH
1315 17263 7112 CLL RTR
1316 17264 7010 RAR
1317 17265 4302 JMS PR4BIT
1318 17266 1243 TAD DATEWD /AND YEAR
1319 17267 0365 AND (7
1320 17270 1364 TAD (70 /GOOD TIL 77
1321 17271 4763 JMS I (PRNTNM
1322 17272 4762 JMS I (TOUT /PUT OUT LINE
1323 17273 5505 JMP I ENDSTF
1324
1325 17274 0000 TENCNT, 0
1326 17275 0000 P1, 0
1327 17276 5700 SPEC, 5700 /SLASH FOR DATE
1328 17277 0057 57
1329 17300 7200 7200 /I FOR TIME
1330 17301 0040 40
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1331 /PRINT ROUTINE FOR 4 BIT NUMBERS
1332
1333 17302 0000 PR4BIT, 0
1334 17303 3113 DCA 0
1335 17304 1361 TAD (57
1336 17305 3274 DCA TENCNT /TENS INITIALLY=0
1337 17306 1113 TAD 0 /GET THE DIGITS
1338 17307 2274 DECMOR, ISZ TENCNT
1339 17310 1360 TAD (=12
1340 17311 7500 SNA
1341 17312 5307 JMP DECMOR /COUNT TENS
1342 17313 1357 TAD (72 /60+12
1343 17314 3113 DCA 0
1344 17315 1275 TAD P1 /SPLIT ACROSS WORDS?
1345 17316 7450 SNA
1346 17317 5335 JMP REG /NO
1347 17320 1356 TAD (SPEC+1 /P1 IS +1 OR -1
1348 17321 3275 DCA P1 /POINT TO CORRECT FILLERS
1349 17322 1675 TAD I P1 /YES=GET LEADING CHAR
1350 17323 1274 TAD TENCNT
1351 17324 4516 PUTW /1ST DIGIT TO RIGHT
1352 17325 2275 ISZ P1
1353 17326 1113 TAD 0 /2ND DIGIT TO LEFT
1354 17327 7106 CLL RTL
1355 17330 7006 RTL
1356 17331 7006 RTL
1357 17332 1675 TAD I P1 /AND 2ND DELIM
1358 17333 4516 SAVIT, PUTW
1359 17334 5702 JMP I PR4BIT
1360 17335 1274 REG, TAD TENCNT
1361 17336 7106 CLL RTL
1362 17337 7006 RTL
1363 17340 7006 RTL
1364 17341 1113 TAD 0
1365 17342 5333 JMP SAVIT
1366 17356 7277
1367 17357 0072
1368 17360 7766
1369 17361 0057
1370 17362 5473
1371 17363 6324
1372 17364 0070
1373 17365 0007
1374 17366 0370
1375 17367 7400
1376 17370 7521
1377 17371 7003
1378 17372 0040
1379 17373 7143
1380 17374 7115
1381 17375 0037
1382 17376 0017
1383 17377 5472
1384 7400
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1385 /REQUEST A TASK1
1386
1387 /A) IMMEDIATELY
1388 /B) AFTER AN INTERVAL
1389 /C) AT A TIME OF DAY
1390 /D) AFTER AN INTERVAL AND PERIODICALLY
1391 /E) AT A TIME OF DAY AND PERIODICALLY
1392
1393 17400 4777 SCHED, JMS I (GETTSK /GET TASK
1394 17401 4506 JMS I BCKUP
1395 17402 4807 JMS I LEGTIM
1396 17403 5500 JMP I ERRLM /MUST BE DELIM
1397 17404 5776 JMP I (REQUEST /JUST A REQUEST
1398 17405 3112 DCA ACH
1399 17406 3111 DCA ACL /INITIALIZE INTERVAL
1400 17407 4503 JMS I GET
1401 17410 1375 TAD (=, /CHECK FOR NULL INTERVAL
1402 17411 7450 SNA
1403 17412 5223 JMP SAVTIM /YES = GET PERIOD
1404 17413 1374 TAD ("=, /CHECK FOR 0 TIME=0D=DAY
1405 17414 7640 SZA CLA
1406 17415 5310 JMP INTSCH
1407 17416 4773 JMS I (HRMIN /DECODE TIME SPECIFICATION
1408 17417 1572 TAD (TDDL
1409 17420 6201 CDF 0
1410 17421 4771 JMS I (DBLSUB /SUBTRACT CURRENT T.O.D. TO GET INTERVAL
1411 17422 6211 CDF CUR
1412 17423 1112 SAVTIM, TAD ACH
1413 17424 3321 DCA SCHDHI
1414 17425 1111 TAD ACL
1415 17426 3322 DCA SCHDLO
1416 17427 1770 TAD I (CRALT
1417 17430 7640 SZA CLA /END OF LINE SIGN
1418 17431 5240 JMP ZRDINT /YES = NO INTERVAL
1419 17432 4253 JMS GETINT
1420 17433 1112 TAD ACH
1421 17434 3323 DCA RSCHHI /SAVE RESCHEDULE UNITS IN CLOCK MESSAGE
1422 17435 1111 TAD ACL
1423 17436 3324 DCA RSCHLO
1424 17437 7332 AC2000
1425 17440 1367 ZRDINT, TAD (1000
1426 17441 1766 SNDCCLK, TAD I (TSKWD
1427 17442 3320 DCA SCHDWD
1428 17443 4020 CAL
1429 17444 0000 SEND
1430 17445 0001 CLOCK
1431 17446 7513 SCHMES
1432 17447 5763 JMP I (BKLEN
1433
1434 /CANCEL ALL CLOCK QUEUE ENTRIES FOR A TASK
1435
1436 17450 4777 CANCEL, JMS I (GETTSK /GET TASK = RETURNS NUMBER IN AC AND "TSKWD"
1437 17451 7330 AC4000 /"CANCEL" DPCODE FOR CLOCK HANDLER IS 4000
1438 17452 5240 JMP ZRDINT /SEND THE CLOCK THE CANCEL MESSAGE

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1439 /ROUTINE TO GET AN INTERVAL =
1440 /INTERVALS ARE A NUMBER FOLLOWED BY H,M,S OR T
1441 /THIS ROUTINE IS JUMPED INTO BY "HRMIN"
1442
1443 17453 0000 GETINT, 0
1444 17454 4764 JMS I (GETN
1445 17455 3313 DCA S2 /THIS IS THE ALPHA FOR UNIT
1446 17456 1363 TAD (INTTBL
1447 17457 3314 DCA S1
1448 17460 3112 DCA ACH
1449 17461 3111 DCA ACL /CLEAR AC PRIOR TO ADDS
1450 17462 1714 NXTINT, TAD I S1 /NOW CHECK FOR MATCHING UNITS
1451 17463 2314 ISZ S1
1452 17464 7450 SNA
1453 17465 5762 JMP I (CHRR
1454 17466 7041 CIA
1455 17467 1313 TAD S2
1456 17470 7650 SNA CLA
1457 17471 5275 JMP FNDINT /FOUND THEM
1458 17472 2314 ISZ S1
1459 17473 2314 ISZ S1
1460 17474 5262 JMP NXTINT /TRY AGAIN
1461 17475 1104 FNDINT, TAD NUMB /PREPARE COUNT ** HRMIN ENTERS HERE **
1462 17476 7041 CIA
1463 17477 3313 DCA S2
1464 17500 1314 MORUNT, TAD S1 /PASS UNITS FOR ADD
1465 17501 4761 JMS I (DBLADD
1466 17502 2313 ISZ S2
1467 17503 5300 JMP MORUNT
1468 17504 4507 JMS I LEGTIM
1469 17505 5500 JMP I ERRLM /ILLEGAL TERMINATING DELIMITER
1470 17506 7000 SC7000, 7000 /EITHER SPACE, COMMA, OR EOL IS OK
1471 17507 5653 JMP I GETINT
1472
1473 17510 4506 INTSCH, JMS I BCKUP
1474 17511 4253 JMS GETINT /GET INTERVAL
1475 17512 5223 JMP SAVTIM
1476 17513 0000 S2, 0
1477 17514 0000 S1, 0
1478 17515 0000 SCHMES, ZBLOCK 3
1479 17520 0000 SCHDWD, 0 /2000*TASK NUM
1480 17521 0000 SCHDHI, 0
1481 17522 0000 SCHDLO, 0
1482 17523 0000 RSCHHI, 0
1483 17524 0000 RSCHLO, 0 /RESCHEDULE INTERVAL (IF APPLICABLE)

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1484      /COMPUTE THE NUMBER OF TICKS IN A DAY FOR THE TIME=OF=DAY FUDGE
1485
1486      0005      TEMPH=3*SHERTZ*40
1487      17525 3000 FUDGE, =600*SHERTZ
1488      17526 5416 FUDGE, =25*SHERTZ-TEMPH=1
1489
1490      17527 0000 HRMIN, 0      /IF SPEC HRS,MUST HAVE MINS
1491      17530 4764 JMS I (GETN      /ONLY I BET HRS + MINS
1492      17531 1360 TAO (=M1
1493      17532 7640 SZA CLA
1494      17533 5501 JMP I ERRNUM /ND 1 = ERRDR
1495      17534 1327 TAO HRMIN
1496      17535 3253 DCA GETINT /FAKE OUT "GETINT" TO OD SOME WORK FOR US LATER
1497      17536 1104 TAO NUMB /MULTIPLY HRS BY 60 TO GET MINS
1498      17537 7166 STL CMA RTL
1499      17540 7006 RTL
1500      17541 1104 TAO NUMB
1501      17542 7146 CLL CMA RTL
1502      17543 3327 DCA HRMIN
1503      17544 4764 JMS I (GETN /GET MINS
1504      17545 4506 JMS I BCKUP
1505      17546 1357 TAO (MINCON
1506      17547 3314 OCA S1 /SET UNITS TO MINUTES
1507      17550 1326 TAO FUDGEH
1508      17551 3112 OCA ACH /INITIALIZE AC TO MIDNIGHT FUDGE
1509      17552 1325 TAO FUDGE, /BEFORE WE ADD IN TICKS
1510      17553 3111 DCA ACL
1511      17554 1327 TAO HRMIN
1512      17555 5275 JMP FNDINT /CONVERT MINUTE: TO TICKS AND RETURN
1513      17557 7150
1514      17560 7506
1515      17561 7063
1516      17562 6076
1517      17563 7144
1518      17564 7115
1519      17565 5735
1520      17566 5677
1521      17567 1000
1522      17570 5472
1523      17571 7077
1524      17572 0036
1525      17573 7527
1526      17574 7754
1527      17575 7524
1528      17576 5726
1529      17577 5603
1530      7600
1531
1532

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ACH 0112      ENDSTF 0105      LEGLIN 0107      POSTEF 6714
ACL 0111      ENDX 5670      LPT 0004      PROTLF 6510
AC0002 7326      EDL 0110      LSTCNT 6760      PRNCON 6735
AC2000 7332      EOLA 5465      LTA 0006      PRNTOT 7244
AC3777 7350      EORHWT 0200      L7600 6050      PRNTH 7016
AC4000 7330      ERMSG 6063      MCR 0005      PRNTNM 6324
AC7775 7346      ERRA 6070      MCREP 0041      PR12BT 6312
AC7776 7344      ERRDLH 0100      MCRHES 6043      PR4BIT 7302
ALPNUM 5405      ERNNAH 0102      MCRSYS 0001      P8TSPC 7117
BACKUP 5460      ERRNUM 0101      MINCN1 7151      PUTM 4516
BCKUP 0106      EXAM 6726      MINCON 7150      PUTMX 5432
BKELEN 5735      EXDLAY 6311      MINLOP 7041      PWRP 0032
BKGC 6062      EXIT 6273      MINS 7062      PWRFAL 0031
BKGLP 6052      EXMSG 5505      MORUNT 7500      P1 7275
BLKARG 0010      E1MSG 5512      MSGTOL 1176      Q 0113
BUMP 6705      FLGLP 6445      MSGMT 0020      RECEIV 0031
CAL 4020      FLGTOL 6535      NAMCOM 5700      REG 7335
CANCEL 7450      FNDINT 7475      NAME 6246      REQUEST 5736
CHECKP 0001      FREE 4000      NAMEA 5600      RESTBL 1414
CHKMOR 5705      FUDGEH 7526      NAMEH 6104      RF08 0011
CHNR 6076      FUDGE, 7525      NAMES 6176      RK8 0010
CLKQLN 0020      FULSYS 6411      NAMGET 5632      RSCHHI 7533
CLKTYP 0000      GET 0103      NETMT 0010      RSCHLO 7534
CLOCK 0001      GETA 5400      NMFIT 0034      RUN 0033
CMDLP 6031      GETINT 7453      NMTBL 6200      RUNWT 1090
CMDLST 6127      GETN 7115      NDCRAL 5450      RXBA 0017
COMMAN 0043      GETNXL 7126      NODTL 6020      SAVIT 7333
CRALT 5472      GETNXT 7254      NODDOD 6457      SAVTIM 7433
CSA 0013      GETTSK 5603      NODPGE 6460      SCHOMI 7531
CSAF 0014      GET2OC 6600      NDNWRT 0000      SCHDLO 7532
CUR 0010      GFLD 6762      NTASK3 0023      SCHDWD 7530
CUR2 0010      G2A 6667      NUMB 0104      SCHEO 7400
DATE 0040      G3 5675      NUMER 6120      SCHMES 7515
DATEWD 7243      G7 5676      NUHTSK 5623      SCT000 7506
DATEX 7200      HERTZ 0170      NXT 5650      SECCON 7133
DBLAOD 7063      HGFLO 0030      NXTINT 7462      SEND 0010
DBLSUB 7077      HRCON 7145      NXTTSK 6521      SENDW 0011
DECHOR 7307      HRCN1 7146      OCTNUM 6633      SHERTZ 0014
DEPSIT 6670      HRCTEM 0001      ONETSK 6414      SKPINS 0006
DEPSLP 6672      HRLOP 7033      OSFILL 0004      SNOCLK 7441
DERAIL 0007      HRMIN 7527      OSFLDS 0002      SPEC 7276
DF32 0012      HRS 7061      OSKBOV 0030      START 6011
DIG 7143      ICS 0016      OSY80 0010      START2 6011
DISABL 5745      INBUF 5512      OSTTDV 0031      STOP 5732
DLNER 6112      INIWT 0000      OS8 0023      ST1 6533
DNEWT 0001      INIWT2 0000      OS8F 0020      ST2 6534
DOTIME 7003      INLENG 0052      P 0115      SUNIT 0000
DTA 0007      INTSCH 7510      PARTOL 1420      SUSPND 0004
D87 6647      INTYBL 7144      PARTNS 0000      SWAPPE 0021
EAE 0001      IP 5404      POP12 0000      SWPMT 0400
EPWT 2000      ISITDN 6616      POP0E 0001      SYS 0010
ENABLE 5740      ISITNM 5422      PINOUP 6047      SYSOUT 6586
ENABWT 0040      ITSEOL 5456      POST 0005      SYSTAT 6400
END 5671      LEGAL 5436      POSTOP 6724      S1 7514
END8 6000      LEGAL 5436      POSTOS 5424      S2 7513

```

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TASK 0005
TASK2 0024
TEMPH 0005
TENCNT 7274
YFTABL 1367
YICCON 7136
TIME 7000
TODH 0037
TODL 0036
TSKWD 5677
TSTABL 1244
TSWPLG 0035
TTOUT 5473
TTY 0003
TWOHOR 6641
UNBARG 0012
UPCHCK 6413
USERMT 0100
V 0114
W 5504
WAITE 0002
WAITH 4425
XFLD 6761
XNAME 5601
XNAME1 5602
YSITIS 7132
ZROINT 7440

93

ERRORS DETECTED: 0
LINKS GENERATED: 0

ACM	266#	763	776	777	779	1127	1139	1147	1153	1176
	1178	1192	1193	1398	1412	1428	1448	1508		
ACL	265#	1124	1137	1172	1173	1186	1187	1399	1414	1422
	1449	1510								
AC0002	112#									
AC2000	111#	1424								
AC3777	110#									
AC4000	109#	1437								
AC7775	108#	1006								
AC7776	107#	414								
ALPNUM	288#	296	299	308	410	438	438			
AO	135#									
BACKUP	262	342#	346							
BCKUP	262#	404	406	441	489	542	764	773	846	996
	1001	1048	1076	1286	1394	1473	1504			
BKELEN	482	489#	499	507	1432					
BKGCT	564	565	566	567	568	572#				
BKGLP	564#	569	571							
BLKARG	130#	505								
BUMP	1025	1032	1049	1053#	1055	1059	1096			
CAL	116#	357	488	487	496	504	531	577	1069	1428
CANCEL	627	1436#								
CHECKP	54#									
CHKMOR	457#	466	471							
CHRR	419	503#	1453							
CLK	670									
CLKQLN	95#									
CLKTYP	94#									
CLOCK	63#	93	273	476	479	621	668	669	1115	1430
CMDLP	547#	553								
CMDLST	545	613#								
COMMAM	160#									
CRALT	331	354#	522	537	1117	1121	1263	1416		
CS	138#									
CSA	74#	695	696							
CSAF	75#	780	781	782						
CT	136#									
CUR	175	175	239#	247	253	528	862	981	922	1043
	1094	1129	1141	1183	1285	1383	1411			
CUR2	183	183	247#							
DATE	166#	1284	1302							
DATEWD	1266	1272	1277	1278	1282	1298#	1304	1305	1313	1318
DATEX	623	1263#								
OBLADD	1151	1168#	1179	1465						
OBLSUB	1143	1145	1181#	1194	1410					
OECHOR	1338#	1341								
DEPSIT	634	1039#								
DEPSLP	1041#	1051								
DEMAIL	129#									
DF32	73#									
DIG	1210	1215	1218#	1281						
DISABL	503#	618								
DLMER	256	595#								
DNEW	149#									
DOTIME	1128#	1298								
DTA	69#	678	679							
DO7	987	1009	1011	1020#	1027	1034	1035			
EAE	58#									
EFWT	141#	530	945							

95

ENABLE	495#	616								
ENABWT	146#	498	506	953						
END	442#	443								
ENDS	261	522#								
ENDSTF	261#	491	548	788	932	1046	1072	1188	1138	1165
	1289	1323								
ENDX	431	439	441#							
EOL	264#	498	774	1081	1123					
EOLA	264	348#	351	352						
EORHWT	144#	955								
ERRMSG	573#	580								
ERRA	576#	583	589	595	601					
ERRDLM	256#	350	766	767	848	998	1045	1288	1295	1396
	1469									
ERRNAM	258#	392	544	769	772					
ERRNUM	257#	401	1010	1040	1065	1204	1494			
EXAM	632	785	1075#							
EXDLAY	790	797#								
EXIT	642	782#								
EXMSG	360	367#								
E1MSG	361	365	370#							
FLGLP	884#	891	894							
FLGTBL	882	943#								
FNDINT	1457	1461#	1512							
FREE	133#									
FUDGEH	1488#	1507								
FUDGEL	1142	1487#	1509							
FULSYS	849	854#								
GET	259#	289	324	407	989	1021	1198	1205	1400	
GETA	259	279#	282							
GETINT	1419	1443#	1471	1474	1496					
GETN	1196#	1208	1279	1292	1444	1491	1503			
GETNXL	1205#	1217								
GETNXT	1267	1273	1291#	1297						
GETTSK	387#	403	477	486	495	503	760	850	1393	1436
GET2OC	978#	999	1083	1084	1039	1063	1075			
GFLD	993	1057	1058	1066	1082	1104#				
GOTASK	395#	410								
G2A	986	991	995	1036#	1042	1054	1068	1088	1093	
G3	415	437	447#							
G7	413	429	434	435	436	448#				
HERTZ	97#									
HGFLO	52#									
HRCOM	1144	1231#								
HRCOM1	1233#									
HRCOM2	1232#	1233								
HRCOM3	1144#	1149								
HRCOM4	1120	1407	1498#	1495	1502	1511				
HRS	1132	1146	1157	1166#						
ICS	76#									
INBUF	371#	560								
INIWT	179	240#								
INIWT2	187	248#								
INLENG	250#	371	559							
INTSCH	1406	1473#								
INTBL	1230#	1446								
IP	280	281	283#	344	345	536				
ISITDN	980	988	992#							
ISITNM	298	305#	310	312	1199	1206				
ITSEOL	332	339#								

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LEGAL	263	3230	330	339	340								
LEGLIM	2630	349	442	530	765	847	997	1044	1287	1395			
LPT	1460												
LPTCNT	660	719	720										
LTA	1000	1090	1101										
L7600	600	729	730										
MCR	5610	563											
MCREP	670	90	830	660									
MCRME0	1670	527											
MCRBY0	534	5500											
MINCNI	91	2420	242	272	637	835							
MINCON	1237												
MINLOP	1150	12360	1909										
MINS	11500	1155											
MORUNT	1135	1152	1160	11670									
M0GTBL	14640	1467											
M0GWT	1520	153	172	180	897								
NAMCOM	1470	943											
NAME	390	4520	460	472	473	770							
NAMEA	620	7600											
NAMER	5030	412											
NAMES	250	5090	644										
NAMGET	6500	660	664	669	674	679	684	691	696	701			
NETHT	706	710	715	720	725	730	736	742	747	752			
NHFIT	762	873											
NHTBL	300	4110	422	423	445	543	768						
NOCRAL	1400												
NODTL	2510	274	737										
NOGOOD	453	6570	650	756									
NOMOPG	329	3330											
NONRWT	900	9270											
NTASKS	337	3400											
NUMB	880	8950											
NUMER	957												
NUMTSK	530	70	153	155	150	159	246	274	304	399			
NXT	455	657	756	757	854								
NXTINT	2600	409	901	994	1002	1000	1028	1033	1050	1197			
NXTTSK	1211	1213	1216	1296	1461	1497	1500						
OCTNUM	257	6010											
ONETSK	309	4040											
OSFILL	4250	440											
OSFLOS	14500	1460											
OSKBDV	867	9200											
OSBYSD	405	979	1000	10050	1012	1015	1016	1047					
OSTTDV	853	8570											
OS0	800												
OS0F	800												
P	780	83	714	715									
PARTBL	790	709	710	711									
PARTNS	2690	454	457	461	462	469	546	547	548	549			
PDP12	554	555	556	852	855	906	920						
PDP0E	1590												
PINBUF	550												
POST	490												
POSTDF	400	703											
POST03	535	5600											
POSTEF	1270	1070											
PROTLP	636	10630											
PRNCON	9190	920											
PRNTOT	10020	1009											
PRNTM	1265	13000											
PR12BT	1119	11310											
PR40BT	800	800	8090	820	869	1321							
PSTSPC	790	807	917	923	1009	1095							
PUTW	1150	1163	1310	1317	13330	1359							
PUTW	1190	1203											
PURF	270	356	819	893	905	937	1007	1091	1051	1350			
PURFAL	271	314	317										
P1	640	724	725	726									
Q	510												
RECEIV	1131	1159	1300	1312	13260	1344	1340	1349	1352	1357			
REG	2670	290	291	297	325	326	424	799	1000	1005			
REQUEST	890	900	1169	1171	1174	1177	1182	1184	1180	1190			
RESTBL	1334	1337	1343	1353	1364								
RF00	1230												
RK0	1346	13600											
RSCHMI	4790	1397											
RSCHLO	1500	159											
RUN	720	690	691	692									
RUNWT	710	87	102	673	674								
RX0A	1421	14020											
RX0B	1423	14030											
RX0C	1250	401											
RX0D	1420	947											
SAVIT	770	735	736	737									
SAVTIM	741	742	743										
SCH0HI	746	747	740										
SCH0LO	751	752	753										
SCH0WD	13500	1365											
SCHED	1403	14120	1475										
SCHMES	1413	14000											
SC7000	1415	14010											
SECCON	1427	14790											
SEND	477	630	13930										
SENDW	1431	14700											
SHERTZ	1220	1429											
SKPINS	1310	350	532	570									
SNDCLK	900	1231	1232	1233	1236	1237	1240	1406	1407	1408			
SPEC	1200												
STANT	14260												
START2	13270	1347											
STOP	176	523	5310	501									
ST1	104	5630											
ST2	400	614											
SUNIT	874	875	877	878	883	884	885	886	892	914			
SUSPND	916	921	924	9400									
SWAP	859	861	863	864	889	910	925	9410					
SWAPPE	1030												
SWPWT	1260	400											
SYS	605												
	700	101	157	159	603	604							
	1430	949											
	1020												

97

POSTDF	1067	10710										
POST03	1170											
POSTEF	636	10630										
PROTLP	9190	920										
PRNCON	10020	1009										
PRNTOT	1265	13000										
PRNTM	1119	11310										
PR12BT	800	800	8090	820	869	1321						
PR40BT	790	807	917	923	1009	1095						
PSTSPC	1150	1163	1310	1317	13330	1359						
PUTW	1190	1203										
PUTW	270	356	819	893	905	937	1007	1091	1051	1350		
PURF	271	314	317									
PURFAL	640	724	725	726								
P1	510											
Q	1131	1159	1300	1312	13260	1344	1340	1349	1352	1357		
RECEIV	2670	290	291	297	325	326	424	799	1000	1005		
REG	890	900	1169	1171	1174	1177	1182	1184	1180	1190		
REQUEST	1334	1337	1343	1353	1364							
RESTBL	1230											
RF00	1346	13600										
RK0	4790	1397										
RSCHMI	1500	159										
RSCHLO	720	690	691	692								
RUN	710	87	102	673	674							
RUNWT	1421	14020										
RX0A	1423	14030										
RX0B	1250	401										
RX0C	1420	947										
RX0D	770	735	736	737								
SAVIT	741	742	743									
SAVTIM	746	747	740									
SCH0HI	751	752	753									
SCH0LO	13500	1365										
SCH0WD	1403	14120	1475									
SCHED	1413	14000										
SCHMES	1415	14010										
SC7000	1427	14790										
SECCON	477	630	13930									
SEND	1431	14700										
SENDW	1220	1429										
SHERTZ	1310	350	532	570								
SKPINS	900	1231	1232	1233	1236	1237	1240	1406	1407	1408		
SNDCLK	1200											
SPEC	14260											
STANT	13270	1347										
START2	176	523	5310	501								
STOP	104	5630										

870	876	879	915	919	934#	938
839	845#					
1447	1450	1451	1450	1459	1464	1477# 1506
1445	1455	1463	1464	1476#		
172	174	170	230#	526		
180	182	186	246#			
1486#	1488					
1325#	1336	1338	1350	1360		
155#	158	170	186	857		
1244#						
625	1117#					
165#	1120	1138				
164#	1126	1136	1486			
395	396	402	449#	479	1426	
153#	155	174	182	913		
163#	787					
355#	363	927	1097	1164	1322	
65#	359	533	579	663	664	
1011#	1014					
135	705	706				
132#	497					
856#	931					
145#	951					
260#	393	456	456	788	811	812
856	858	868	871	895	911	1007
315	316	362	365#			
124#						
118#	529					
1041	1092	1103#	1105			
383	384#	464	551	775		
385#	417	467	778	782		
1200	1209#					
1418	1425#	1438				
15570	361					
15571	335					
15572	333					
15573	311					
15574	308					
15575	306					
15576	294					
15577	292					
15765	455					
15766	453					
15767	433					
15770	425	432				
15771	420					
15772	419					
15773	418	430	438			
15774	416					
15775	405					
15776	399					
15777	394					
16171	551					
16172	545					
16173	543					
16174	536					
16175	527					
16176	526					
16177	522	537				
16363	618					

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16364	815	817
16365	810	
16366	795	
16367	787	
16370	785	
16371	783	
16372	778	782
16373	775	
16374	770	
16375	766	
16376	762	
16377	760	
16562	936	
16563	927	
16564	918	
16565	917	923
16566	913	
16567	909	
16570	904	
16571	897	
16572	882	
16573	873	
16574	869	
16575	857	
16576	854	
16577	850	
16770	1097	
16771	1090	
16772	1089	1095
16773	1086	
16774	1024	1056
16775	1022	
16776	992	
16777	985	1083
17162	1209	
17163	1201	
17164	1199	1206
17165	1164	
17166	1162	
17167	1158	1163
17170	1150	
17171	1144	
17172	1142	
17173	1131	1159
17174	1128	1138
17175	1126	1136
17176	1120	
17177	1117	1121
17356	1347	
17357	1342	
17360	1339	
17361	1335	
17362	1322	
17363	1321	
17364	1320	
17365	1319	
17366	1314	
17367	1306	
17370	1293	
17371	1290	

17372	1284	1382
17373	1281	
17374	1279	1292
17375	1274	
17376	1268	
17377	1263	
17557	1585	
17560	1492	
17561	1465	
17562	1453	
17563	1446	
17564	1444	1491 1503
17565	1432	
17566	1426	
17567	1425	
17570	1416	
17571	1410	
17572	1400	
17573	1407	
17574	1404	
17575	1401	
17576	1397	
17577	1393	1436

V3

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/PARAMETERS FOR RTS=8 TASKS (VERSION PAL8-V9D 09/11/75 PAGE 1

1	/PARAMETERS FOR RTS=8 TASKS (VERSION 2)
2	/
3	/
4	/
5	/
6	/
7	/
8	/
9	/
10	/
11	/COPYRIGHT (C) 1974,1975 BY DIGITAL EQUIPMENT CORPORATION
12	/
13	/
14	/
15	/
16	/
17	/
18	/
19	/
20	/
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35	/
36	/
37	/
38	/
39	/
40	/
41	/
42	/
43	/
44	/

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```

45
46      /RTS8 V2 EXEC PARAMETERS - EDITED BY USER
47
48      0001 PDP8E=1
49      0002 PDP12=0
50      0001 EAE=1
51      0001 PWRPAL=1
52      0030 HGMFLD=30
53      0023 NTASKS=23
54      0001 CHECKPT=1
55      0000 PARTNS=0
56
57      /((THE N PARTITIONS ARE NUMBERED FROM 0 TO N-1))
58
59      /COMMON TASK NUMBERS - EDITED BY USER
60      /IT IS ADVISABLE TO DEFINE ALL TASKS HEREIN, NAMES GIVEN BELOW
61      /ARE USED BY SOME SYSTEM TASKS AND SHOULD BE DELETED FROM THIS
62      /LIST IF THE CORRESPONDING TASK IS NOT INCLUDED IN THE SYSTEM
63
64      0001 CLOCK=1
65      0002 PWRP=2
66      0003 TTY=3
67      0004 LPT=4
68      0005 MCR=5
69      0006 LTA=6
70      0007 DTA=7
71      0021 SWAPPER=21
72      0010 RKS=10
73      0011 RPS=11
74      0012 DP32=12
75      0013 CSA=13
76      0014 CSAP=14
77      0016 ICS=16
78      0017 RXSA=17
79      0023 OSS=NTASKS
80      0020 OSBP=20
81
82      /SOFTWARE PARAMETERS - EDITED BY USER
83
84      IFDEF OS0 <
85      0002 OSFLDS=2
86      0030 OSKBDV=30
87      0031 OSTTDV=31
88      0010 OSSYSD=RKS
89      0004 OSFILL=4
90
91      IFDEF MCR <
92      0001 MCRSYS=1
93
94      IFDEF CLOCK <
95      0000 CLKTYP=0
96      0020 CLKQLN=20
97
98      DECIMAL
99      0170 HERTZ=120
0074 SMERTZ=60
OCTAL

```

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```

100      >
101      IFDEF SWAPPER <
102      0010 SYS=RKS
103      0000 SUNIT=0
104      >

```

```

105 /EQUIVALENCES:
106
107 7344 AC7776= CLL STA RAL
108 7346 AC7775= CLL STA RTL
109 7330 AC4000= CLA STL RAR
110 7390 AC3777= CLL STA RAR
111 7332 AC2000= CLA STL RTR
112 7326 AC0002= CLA STL RTL
113
114 /MONITOR CALL VALUES:
115
116 4020 CAL= JMS 20 /CALL THE EXECUTIVE
117 5424 POSTOS= JMP I 24 /DISMISS AN INTERRUPT
118 4425 WAITM= JMS I 25 /WAIT FOR MULTIPLE EVENTS
119
120 /NOTE: "*" MEANS CRITICAL VALUE MAY NOT
121 /BE CHANGED WITHOUT MODIFYING SYSTEM CODE!!
122 0000 SEND= 0 /SEND MESSAGE
123 0001 RECEIVE= 1 /RECEIVE MESSAGE
124 0002 WAIT= 2 /WAIT FOR EVENT FLAG
125 0003 RUN= 3 /CONTINUE TASK EXECUTION
126 0004 SUSPND= 4 /SUSPEND TASK EXECUTION
127 0005 POST= 5 /POST AN EVENT FLAG
128 0006 SKPINS= 6 /INSERT CODE INTO INTERRUPT SKIP CHAIN
129 0007 DERAII= 7 /INITIATE END=ACTION
130 0010 BLKARG= 10 /BLOCK TASK FOR REASON SPECIFIED IN ARG
131 0011 SENDM= 11 /SEND MESSAGE AND WAIT
132 0012 UNBARG= 12 /UNBLOCK TASK FOR REASON SPECIFIED IN ARG
133 4000 FREE= 4000 /**FREE PARTITION
134
135 IFDEF UDC <AO=0;DO=1;DI=2;GC=3;EC=4;RC=5
136 DC=6;ECT=7;CS=10;DCT=11;AI=12>
137
138 /TASK STATUS FLAGS:
139
140 4000 NONRHT= 4000 /**NONRESIDENT TASK WAIT
141 2000 EPHT= 2000 /EVENT FLAG WAIT
142 1000 RUNHT= 1000 /SCHEDULE WAIT
143 0400 SWPHT= 0400 /**SWAPPER WAIT
144 0200 EORHHT= 0200 /EVENT FLAG OR MESSAGE WAIT
145 0100 USERHT= 0100 /USER SPECIFIED WAIT
146 0040 ENABHT= 0040 /ENABLE WAIT
147 0020 MSGHT= 0020 /MESSAGE WAIT
148 0010 NETHT= 0010 /NETWORK WAIT (RESERVED FOR POSSIBLE FUTURE USE)
149 0001 ONENT= 0001 /**DOES NOT EXIST WAIT

```

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```

150 /SYSTEM LOCATIONS:
151
152 1176 MSGTBL= 1200-2 /TASK MESSAGE TABLE
153 1244 TSTABL= NTASKS+2*2+MSGTBL-4 /TASK STATE TABLE = MOLOS
154 1367 TFTABL= NTASKS+2*4+TSTABL-1 /TASK LINK,UM,DP,IF,PC,AC,MQ
155 /TASK FLAGS TABLE = MOLOS
156 /TASK STATUS FLAGS
157 IFDEF SWAPPER <
158 1414 RESTBL= TFTABL+NTASKS+2 /RESIDENCY TABLE
159 1420 PARTBL= NTASKS+SWAPPER*2+RESTBL+347774 /PARTITION TABLE
160 0043 COMMAND=43 /SWAPPER COMMAND BUFFER
161 >
162
163 0035 TSWFLG= 35 /TASK SW INHIBIT FLAG (N FIELD 0
164 0036 TODL= 36 /LOW ORDER TIME OF DAY (N FIELD 0
165 0037 TODH= 37 /HIGH ORDER TIME OF DAY (N FIELD 0
166 0040 DATE= 40 /DATE IN OS6 FORMAT (N FIELD 0
167 0041 MCREP= 41 /MCR START EVENT FLAG (N FIELD 0
168

```

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```

169 /TASK TABLE SETUP = "TASK", "CUR", "ININT", AND "START"
170 /MUST BE DEFINED BY TASK1
171
172 *TASK2*MSGTBL
173 01244 0000 ZBLOCK 2 /MESSAGE BUFFER INITIALLY CLEAR
174 *TASK4*TTABL
175 01360 0000 CUR10*CUR /INITIAL FLAGS
176 01361 4600 START
177 01362 0000 0 /INITIAL AC 0
178 *TASK*TTABL
179 01412 0000 ININT
180 *TASK2*MSGTBL
181 01236 0000 ZBLOCK 2 /MESSAGE BUFFER INITIALLY CLEAR
182 *TASK4*TTABL
183 01344 0000 CUR2X10*CUR2 /INITIAL FLAGS2
184 01345 6200 START2
185 01346 0000 0 /INITIAL AC 0
186 *TASK2*TTABL
187 01407 0000 ININT2

```

187

```

188 / OS/8 SUPPORT TASK FOR RTS=8
189 /
190 /
191 /
192 /
193 /
194 /
195 /
196 /
197 /
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```
232      0000 CUR=      0 /MUST LOAD INTO FIELD 0 = CUR REFERENCED FROM 088F ALSO
233      IFDEF      038
234
235      0023 TASK=      038
236      0000 ININT=      0
237
238      /CHANGES SINCE SHAWN'S EDIT: (S.R.)
239      /
240      /      ADDED LINCTAPE AND FLOPPY SUPPORT
241      /      SET BIT 2 OF LOC 07777 IN 03/8
242
243      0030 080F0= HGHFLD
244      0020 080F1= HGHFLD=10
245      0030 080F2=2X0SFLOS=0SFLOS=2=10+HGHFLD
246      0020 080F3=3X0SFLOS=0SFLOS=3=10+HGHFLD
247      0030 080F4=4X0SFLOS=0SFLOS=4=10+HGHFLD
248      0020 080F5=5X0SFLOS=0SFLOS=5=10+HGHFLD
249      0030 080F6=6X0SFLOS=0SFLOS=6=10+HGHFLD
250      0020 080F7=7X0SFLOS=0SFLOS=7=10+HGHFLD
251
252      7760 080DCB= 7760 /ADDRESS OF 03/8 OCB TABLE IN FIELD 1
253      7647 080HNO= 7647 /ADDRESS OF 03/8 RESIDENT HANDLER TABLE IN FIELD 1
254      7746 JSBIT8= 7746 / 03/8 JOB STATUS BITS IN FIELD 0
255
256      7671 03KBHL= 7671 /LOCATION IN FIELD 1 WHICH READS THE KEYBOARD MONITOR
257      7723 03USRL= 7723 /LOCATION IN FIELD 1 WHICH READS IN THE USR
258      0271 03COL0= 0271 /LOCATION IN USR IN FIELD 1 WHICH READS IN CD
259      0200 T88LOC= 0200 /LOCATION IN RTS-8
260
261      6204 CINT=      6204
262      6274 SUF=      6274
263
264      6301 K3FX=      03KB0V=10+6001
265      6302 KCCX=      03KB0V=10+6002
266      6304 KR3X=      03KB0V=10+6004
267      6306 KR0X=      03KB0V=10+6006
268      6311 T3FX=      03TT0V=10+6001
269      6312 TCFX=      03TT0V=10+6002
270      6313 T3XX=      03TT0V=10+6003
271      6316 TL3X=      03TT0V=10+6006
272
273      6661 P3KF=      6661 /LINE PRINTER IOT'I
274      6665 P3IE=      6665
275      6666 P3LS=      6666
276      6667 PCIE=      6667
277
278      0000 FIELD CURX10
279      0166 *166
280      00166 0000 AC,      0 /03/8 AC
281      00167 0000 PC,      0 /03/8 PC
282      00170 0000 LINK,      0
283      00171 0000 UCOF,      0
284      00172 7402 HLT /CDF TO MAPPED 03/I DF
285      00173 5571 JMP I UCOF
286      00174 0000 UCIF,      0
287      00175 7402 HLT /CDF TO MAPPED 03/I IF
```

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287      00176 5574 JMP I UCIF
288      00177 0000 UIF,      0
```

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289      /INITIALIZATION CODE = OVERRITTEN BY RING BUFFERS
290
291      4600      IPDEF  OS8F  <<4600>
292      4600      IPDEF  OS8F  <<4600>
293
294      04600 4020  START, CAL
295      04601 0006      SKPINS
296      04602 5272      TTINT /LINK IN OS/8 TELETYPE
297      IFZERO POPBE <
298      CAL
299      SKPINS
300      KBINT
301      >
302
303      4600  OWBASE= START
304      0020  OWLEN= 20
305
306      4620  IRBASE= OWBASE+OWLEN
307      0010  IRLN= 10
308      4630  IREND= IRBASE+IRLEN
309
310      04603 6233      CDF CIF OS8F0 /OS/8 INITIALIZATION CODE LOADS
311      04604 4607      JMS I OSINIT /INTO OS/8 PAKE FIELD 0
312      04605 5606      JMP I .+1
313      04606 5125      STKBMN /GO LOAD THE OS/8 KEYBOARD MONITOR
314      04607 4000  OSINIT, INITOS
315
316      IFNZRO IRBASE+IRLEN <IRBNDY, _ERROR_>
317      IFNZRO OWBASE+OWLEN <OWBNDY, _ERROR_>
318      IFNZRO ,=IREND+4000 <ZBLOCK IREND=,>
319
320      / TSS/8 INTERRUPT HANDLER
321
322      04630 3166  TSINT, DCA AC
323      04631 7010      RAR
324      04632 3170      DCA LINK
325      04633 7240      STA
326      04634 1000      TAO 0
327      04635 3167      OCA PC /SAVE PC, AC, LINK FROM INTERRUPT
328      04636 6204      CINT /CLEAR USER INTERRUPT FLAG
329      04637 6001      ION /RESTORE INTERRUPTS
330      04640 4254      JMS EXECUT /EXECUTE ONE IOT
331      04641 1170  GOBACK, TAD LINK /GENERAL OS8 STARTUP
332      04642 7104      CLL RAL
333      04643 7201      CLA IAC
334      04644 1175      TAO UCIF+1
335      04645 3247      DCA .+2
336      04646 4171      JMS UCDF
337      04647 7402  OP, HLT
338      04650 1166      TAD AC
339      04651 6274      SUF
340      04652 5567      JMP I PC /GO TO OS/8 IN USER MODE
341
342      04653 0000  PT, 0

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343      /EXECUTE A TRAPPED IOT
344      /CALLED FROM TRAP ROUTINE AND FROM CIF INTERPRETER ("RECURSIVELY")
345
346      04654 0000  EXECUT, 0
347      04655 7402  UCIFX, HLT /CDF TO USERS INSTRUCTION FIELD
348      04656 1567      TAD I PC
349      04657 7112      CLL RTR
350      04660 7012      RTR
351      04661 1377      TAD (=1310 /CHECK FOR CDF 0 OR CDF 10
352      04662 7640      SZA CLA /SINCE THEY ARE THE MOST COMMON THINGS
353      04663 5272      JMP NCDP01
354      04664 7006      RTL /LINK HAS COMPLEMENT OF FIELD BIT
355      04665 7006      RTL
356      04666 1376      TAD (CDF OS8F1 /** DEPENDS ON FACT THAT FIELDS
357      04667 3172      DCA UCDF+1 /** ARE MAPPED IN REVERSE ORDER
358      04670 2167  XNOP, ISZ PC
359      04671 5654  XERET, JMP I EXECUT /LEAVE EXECUT WITH PC BUMPED
360
361      04672 7332  NCDP01, AC2000
362      04673 1567      TAD I PC /GET TRAP INSTRUCTION
363      04674 7420      SNL /IF ITS NOT IOT OR OPR, THE PREVIOUS
364      04675 5775      JMP I (ILLIOT /INST WAS SKP HLT = ERROR
365      04676 1374      TAD (7000
366      04677 7420      SNL /TEST IOT OR OPR
367      04700 5325      JMP MBHALT /OPR
368      04701 0373      AND (704
369      04702 1372      TAD (=200 /CHECK FOR CDF OR CIF (OR BOTH)
370      04703 7650      SNA CLA
371      04704 5771      JMP I (DFSTUF /YES = SPECIAL ROUTINES FOR THESE
372      04705 1370      TAD (IOTLST-1
373      04706 3253      DCA PT
374      04707 1567      TAD I PC
375      04710 3247      OCA OP /SEARCH LEGAL OPCODE LIST
376      04711 6201      CDF 0
377      04712 2253  SROPLP, ISZ PT
378      04713 1653      TAD I PT
379      04714 2253      ISZ PT
380      04715 7450      SNA
381      04716 5767      JMP I (XNOP /UNDEFINED IOT'S ARE NOP'S
382      04717 1247      TAD OP
383      04720 7640      SZA CLA
384      04721 5312      JMP SROPLP
385      04722 1655      TAD I PT
386      04723 3253      OCA PT
387      04724 5653      JMP I PT /GO PROCESS OPCODE

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388 04725 0366 MBHALT, AND (407
389 04726 1365 TAD (=404 /OSR ONLY LEGAL OPR
390 04727 7640 SZA CLA
391 04730 5775 JMP I (ILLIOT
392 04731 7614 CLA OSR SKP
393 04732 1177 XRIF, TAD UIF
394 04733 3253 XOR, DCA PT /GENERAL OR WITH AC
395 04734 1166 TAD AC
396 04735 7040 CMA
397 04736 0253 AND PT
398 04737 1166 TAD AC
399 04740 3166 XACSTO, DCA AC
400 04741 5270 JMP XNOP
401
402 04742 1172 XRDF, TAD UCDF+1
403 04743 7041 CIA
404 04744 1364 TAD (CDF OS8F0 /CALCULATE VIRTUAL DF FROM REAL ONE
405 04745 5333 JMP XOR
406 04764 6231
407 04765 7374
408 04766 0407
409 04767 4670
410 04770 6047
411 04771 5400
412 04772 7600
413 04773 0704
414 04774 7000
415 04775 5063
416 04776 6221
417 04777 6470
418 5000 PAGE

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419 /KEYBOARD HANDLER
420
421 05000 6002 XKSF, IOF
422 05001 1262 TAD IRCNT
423 05002 7650 SNA CLA /INPUT BUFFER EMPTY?
424 05003 5777 JMP I (XKSFMT /YES = WAIT
425 05004 6001 ION
426 05005 2167 XSKP, ISZ PC
427 05006 5776 JMP I (XNOP /SKIP AND RETURN
428
429 05007 1660 XKR8, TAD I IRGET /GET SOMETHING OUT OF THE BUFFER
430 05010 3166 XKCC, DCA AC /INTO THE ACCUMULATOR
431 05011 1262 TAD IRCNT
432 05012 7650 SNA CLA /DON'T EMPTY FROM AN EMPTY BUFFER
433 05013 5776 JMP I (XNOP
434 05014 2262 ISZ IRCNT
435 05015 7000 NOP
436 05016 1260 TAD IRGET
437 05017 7001 IAC
438 05020 0375 AND (=IRLEN-1
439 05021 3260 DCA IRGET
440 05022 5776 JMP I (XNOP
441
442 05023 1660 XKRS, TAD I IRGET
443 05024 5774 JMP I (XOR /OR CHAR INTO A:

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444      KBINT, IFZERO POP6E 4
445      BIF      /LINKAGE INTO IKIP CHAIN
446      K8FX
447      JMP I KBINT
448      CDF CIF 0
449      >
450      05025 6306      KRBX
451      05026 3661      DCA I INPUT
452      05027 1661      TAD I INPUT
453      05030 0373      AND (177
454      05031 1372      TAD      /IF "C","D","Q" OF "S" TYPED,
455      05032 7450      SNA      (=3
456      05033 5240      JMP      CTLCHR
457      05034 1371      TAD      (=17
458      05035 0370      AND      (777)
459      05036 7640      SZA CLA
460      05037 5243      JMP      NOCTRC
461      05040 1261      CTLCHR, TAD INPUT /MAKE IT THE ONLY CHAR IN THE BUFFER
462      05041 3260      DCA      IRGET
463      05042 3262      DCA      IRCNT
464      05043 1261      NOCTRC, TAD INPUT /UPDATE PUT POINTER
465      05044 7001      IAC
466      05045 0375      AND      (=IRLEN=1
467      05046 3261      DCA      IRPUT
468      05047 1262      TAD      IRCNT
469      05050 7141      CIA CLL
470      05051 0375      AND      (=IRLEN=1      /BUMP CHAR COUNT MOD IRLEN
471      05052 7040      CMA
472      05053 3262      DCA      IRCNT
473      05054 7450      SZA
474      05055 1367      TAD      (K8FEF /IF FIRST CHAR IN BUFFER SET EVENT FLAG
475      05056 5424      POST08 /OTHERWISE JUST DISMISS
476
477      05057 0001      K8FEF, 1
478      05060 4620      IRGET, IRBASE
479      05061 4620      IRPUT, IRBASE
480      05062 0000      IRCNT, 0

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481      /ILLEGAL IOT HANDLER = PRINT MESSAGE AND RETURN TO KEYBOARD MONITOR
482
483      05063 7200      ILLIOT, CLA      /CLEAR AC SINCE IT IS RANDOM
484      05064 6201      CDF 0
485      05065 1366      TAD      (ILIDMS
486      05066 3170      DCA      LINK
487      05067 1570      ILIOLP, TAD I LINK /PRINT ERROR MESSAGE ON OS/8 TTY
488      05070 7510      SPA      /LIST ENDS WITH 4600
489      05071 5275      JMP      PRNTPC
490      05072 4765      JMS I (XTLSUB
491      05073 2170      ISZ      LINK
492      05074 5267      JMP      ILIOLP
493      05075 1177      PRNTPC, TAD      /4600 IN AC HERE
494      05076 7112      CLL RTR
495      05077 7010      RAR
496      05100 4765      JMS I (XTLSUB /PRINT FIELD
497      05101 1364      TAD      (=4
498      05102 3170      DCA      LINK
499      05103 1167      TAD      PC
500      05104 7106      PCPTLP, CLL RTL
501      05105 7004      RAL
502      05106 3174      DCA      UCIF
503      05107 1174      TAD      UCIF
504      05110 7004      RAL
505      05111 0363      AND      (=7
506      05112 1362      TAD      (=260
507      05113 4765      JMS I (XTLSUB /PRINT THE PC IN OCTAL
508      05114 1174      TAD      UCIF
509      05115 2170      ISZ      LINK
510      05116 9304      JMP      PCPTLP /4 DIGITS WORTH
511      05117 7600      I7600, 7600 /CLEAR GARBAGE FROM AC
512      05120 1167      TAD      PC
513      05121 7040      CMA
514      05122 0317      AND      I7600 /IF THE ILLEGAL IOT WAS IN THE RESIDENT,
515      05123 7650      SNA CLA /DON'T SAVE CORE ON RELOAD
516      05124 1361      TAD      (=5 /SINCE 8YBI IS PROBABLY WRITE PROTECTED.
517
518      /** FALL INTO NEXT PAGE **

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519 /START KEYBOARD MONITOR AT 07600
520
521 05125 1317 STKBHN, TAD I7600
522 05126 3167 DCA PC
523 05127 3166 DCA AC /AND AC CLEAR
524 05130 1360 TAD (CDF 038F0
525 05131 3172 DCA UCDF+1
526 05132 3177 HNDRET, DCA UIF
527 05133 1172 TAD UCDF+1
528 05134 3175 DCA UCIF+1
529 05135 1175 G0BCKX, TAD UCIF+1
530 05136 6201 CDF 0
531 05137 3757 DCA I (UCIFX
532 05140 5756 JMP I (G0BACK /START INTERPRETING
533 05156 4641
534 05157 4655
535 05160 6231
536 05161 0005
537 05162 0260
538 05163 0007
539 05164 7774
540 05165 5245
541 05166 6153
542 05167 5057
543 05170 7771
544 05171 7764
545 05172 7775
546 05173 0177
547 05174 4733
548 05175 7767
549 05176 4670
550 05177 5207
551 5200

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552 /TELETYPE OUTPUT HANDLER
553
554 05200 6202 XTSP, CIF 0 /INHIBIT INTERRUPTS FOR A WHILE
555 05201 1327 TAD OMCNT
556 05202 1377 TAD (OMLEN
557 05203 7640 SZA CLA /BUFFER FULL?
558 05204 5776 JMP I (X8KP /NO - SKIP RETURN
559 05205 1375 TAD (TSFEF
560 05206 7410 SKP
561 05207 1374 XKSPFT, TAD (KSFEF
562 05210 3227 DCA EF
563 05211 7201 CLA IAC
564 05212 3627 DCA I EF
565 05213 6001 ION
566 05214 1167 TAD PC
567 05215 2167 ISZ PC
568 05216 0373 AND (177 /CHECK IF NEXT LOCATION IS A "JMP ,-1"
569 05217 1372 TAD (5200
570 05220 7041 CIA
571 05221 4174 JMS UCIF
572 05222 1567 TAD I PC /IF IT IS WE SHOULD HANG
573 05223 7640 SZA CLA /OTHERWISE DO A NON-SKIP RETURN
574 05224 5771 JMP I (XERET
575 05225 4020 CAL
576 05226 0002 WAITE
577 05227 0000 EF, 0
578 05230 5770 JMP I (XNOP /DO A SKIP RETURN AFTER WAITING
579 4670 XTSP= XNOP /??
580
581 05231 1166 XTLS, TAD AC
582 05232 4245 JMS XTLSUB /CALL SUBROUTINE USED TO PRINT ERRORS
583 IFNZRO OSFILL
584 05233 1166 TAD AC
585 05234 0373 AND (177
586 05235 1367 TAD (=12
587 05236 7640 SZA CLA
588 05237 5770 JMP I (XNOP /ONLY FILL ON LINE FEEDS
589 05240 4245 JMS XTLSUB
590 05241 4245 JMS XTLSUB
591 05242 4245 JMS XTLSUB
592 05243 4245 JMS XTLSUB /4 FILL CHARS SHOULD SUFFICE
593 >
594 05244 5770 JMP I (XNOP /KEEP ON TRUCKING

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595 05245 0000 XTLSUB, 0
596 05246 3171 DCA UCDF /ROUTINE TO OUTPUT CHAR IN AC
597 05247 1327 TAD OWCNT /SAVE CHAR
598 05250 1377 TAD (OWLEN
599 05251 7650 SNA CLA /WAIT FOR BUFFER TO HAVE SPACE
600 05252 5247 JMP ,=3
601 05253 1171 TAD UCDF
602 05254 3726 DCA I OWCNT
603 05255 1326 TAD OWCNT /STORE CHAR IN BUFFER AND BUMP POINTER
604 05256 7001 IAC
605 05257 0366 AND (=OWLEN=1
606 05260 3326 OCA OWCNT
607 05261 6202 CIF 0 /DELICATE CODE AHEAD
608 05262 7340 STA CLL
609 05263 1327 TAD OWCNT
610 05264 3327 DCA OWCNT /BUMP BUFFER COUNT
611 05265 1171 TAD UCDF
612 05266 7420 SNL
613 05267 6316 TLBX /PRINT IF FIRST CHAR IN BUFFER
614 05270 7200 CLA
615 05271 5645 JMP I XTLSUB

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616 /TELETYPE OUTPUT INTERRUPT ROUTINE
617
618 05272 0000 TTINT, ZBLOCK 2
619 IFZERO POPBE <TSFX>
620 05274 6315 IFNZRO POPBE <TSKX>
621 05275 5672 JMP I TTINT
622 05276 6203 CDF CIF 0
623 IFNZRO POPBE <
624 05277 6311 TSFX /KEYBOARD OR PRINTER?
625 05300 5765 JMP I (KBINT /KEYBOARD
626
627 05301 6312 TCFX /CLEAR PRINTER FLAG
628 05302 1327 TAD OWCNT
629 05303 7700 SNA CLA /IGNORE UNSOLICITED INTERRUPTS (LA30)
630 05304 5424 POSTOS
631 05305 1325 TAD OWCNT
632 05306 7001 IAC
633 05307 0366 AND (=OWLEN=1
634 05310 3325 DCA OWCNT
635 05311 2327 ISZ OWCNT
636 05312 7410 SKP
637 05313 5424 POSTOS /BUFFER NOW EMPTY - LEAVE
638 05314 1725 TAD I OWCNT
639 05315 6316 TLBX /PRINT NEXT CHAR FROM BUFFER
640 05316 7240 STA
641 05317 1327 TAD OWCNT
642 05320 1377 TAD (OWLEN
643 05321 7650 SNA CLA /IF BUFFER JUST BECAME UNFULL,
644 05322 1375 TAD (TSFEF /SET EVENT FLAG
645 05323 5424 POSTOS /ELSE JUST DISMISS
646
647 05324 0000 TSFEF, 0
648 05325 4600 OWCNT, OWCNT
649 05326 4600 OWCNT, OWCNT
650 05327 0000 OWCNT, 0

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651 /LINE PRINTER OUTPUT ROUTINE - USES RTI-8 LPT DRIVER
652
653 IFDEF LPT <
654 05330 1166 XLLS, TAD AC
655 05331 3756 DCA I LPBUF /STORE CHAR IN LPT MESSAGE BUFFER
656 05332 2354 ISZ LPBUF
657 05333 1166 TAD AC
658 05334 0373 AND (177
659 05335 1364 TAD (=15 /CHECK TO SEE IF THE CHARACTER
660 05336 7100 CLL
661 05337 1363 TAD (3 /IS A FORMS MOVEMENT CHARACTER
662 05340 2357 ISZ LPBUFC /(I,E, LF,VT,OR FF)
663 05341 7630 SZL CLA /OR IF THE MESSAGE BUFFER IS FULL
664 05342 7610 SKP CLA
665 05343 5770 JMP I (XNOP /NEITHER - RETURN TO 05/8 JOB
666 05344 3756 DCA I LPBUF /ZERO IS THE BUFFER END CODE
667 05345 4020 CAL
668 05346 0011 SENDH /MOVE THE BUFFER TO THE LINE PRINTER
669 05347 0004 LPT
670 05350 6101 LPMSG
671 05351 1362 TAD (LPBUF
672 05352 3354 DCA LPBUF /RE-INITIALIZE THE BUFFER PPOINTER
673 05353 1361 TAD (=LPTCNT
674 05354 3357 DCA LPBUFC /AND COUNTER
675 05355 5770 JMP I (XNOP /AND CONTINUE
676
677 05356 6106 LPBUF, LPTBUF
678 05357 7734 LPBUFC, =LPTCNT
679
680 IFNDEF LPT <
681 XLLS, ISZ LPFST
682 SKP
683 JMP .+3
684 PSKF
685 JMP .+1 /OH, HOW CRUDE!
686 TAD AC
687 PSLS
688 DCA LPFST /CLEAR FIRST-TIME FLAG
689 JMP I (XNOP
690 LPFST, =1
691 >
692 05361 7734
693 05362 6106
694 05363 0003
695 05364 7763
696 05365 5025
697 05366 7757
698 05367 7766
699 05370 4670
700 05371 4671
701 05372 5200
702 05373 0177
703 05374 5057
704 05375 5324
705 05376 5005

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706 05377 0020
707 05378 5400 PAGE

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708 /CODE TO HANDLE CDF'S AND CIF'S
709
710 05400 1567 DFSTUF, TAD I PC
711 05401 3313 DCA WD
712 05402 7201 CLA IAC
713 05403 0313 AND WD /CHECK CDF BIT
714 05404 7650 SNA CLA
715 05405 5212 JMP NOCDF
716 05406 1313 TAD WD
717 05407 0377 AND (70
718 05410 4776 JMS I (GETFLD /MAP TO CDF TO REAL FIELD
719 05411 3178 DCA UCDF+1 /SAVE IN CDF SJBR
720
721 05412 7326 NOCDF, AC0002
722 05413 0313 AND WD
723 05414 7650 SNA CLA
724 05415 5775 JMP I (XNDP /HMEW!
725 05416 1313 TAD WD /UNLUCKY US = 1 CIF
726 05417 0377 AND (70
727 05420 3350 DCA IBR /SAVE IF BACKUP
728 05421 2167 ISZ PC
729 05422 1350 TAD IBR
730 05423 7041 CIA
731 05424 1177 TAD UIF /IF ITS A CIF 'D CURRENT FIELD,
732 05425 7650 SNA CLA /EXIT IMMEDIATELY BYPASSING EXECUT RETURN
733 05426 5774 JMP I (GOBACK /AND POSSIBLE SUBSEQUENT USELESS SIMULATION
734
735 05427 4174 CIFLP, JMS UCIF
736 05430 1567 TAD I PC
737 05431 3313 DCA WD /GET WORD TO INTERPRET
738 05432 1313 TAD WD
739 05433 7710 SPA CLA
740 05434 5273 JMP NONSTD
741 05435 4243 JMS GEFADR /GET EFFECTIVE ADDRESS
742 05436 1313 TAD WD
743 05437 0317 AND T7000 /ISOLATE DPCDDI
744 05440 1373 TAD (AND I WT /FORM EQUIVALENT INSTRUCTION
745 05441 3313 DCA WD
746 05442 5310 JMP XINLIN /AND EXECUTE I' IN LINE

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747 /SUBROUTINE TO COMPUTE EFFECTIVE ADDRESSES
748
749 05443 0000 GEFADR, 0
750 05444 1313 TAD WD
751 05445 0372 AND (177
752 05446 3347 DCA WT
753 05447 1313 TAD WD
754 05450 0371 AND (200
755 05451 7041 CIA
756 05452 0167 AND PC
757 05453 1347 TAD WT
758 05454 3347 DCA WT /ADD PAGE BITS TO DISPLACEMENT
759 05455 4174 JMS UCIF
760 05456 1313 TAD WD
761 05457 0370 AND (400
762 05460 7650 SNA CLA /IF NO INDIRECT ADDRESS,
763 05461 5643 JMP I GEFADR /OPERAND FIELD = IF
764 05462 1347 TAD WT
765 05463 0367 AND (7770
766 05464 1367 TAD (7770
767 05465 7650 SNA CLA /TEST FOR AUTO=IRS
768 05466 2747 ISZ I WT
769 05467 1747 TAD I WT
770 05470 3347 DCA WT
771 05471 4171 JMS UCDF /IF INDIRECT ADDRESSING,
772 05472 5643 JMP I GEFADR /OPERAND FIELD = DF
773
774 05473 1313 NONSTD, TAD WD
775 05474 7106 CLL RTL
776 05475 7420 SNL
777 05476 5324 JMP JMPJMS /CHECK FOR JMP OR JMS
778 05477 7510 SPA /YES = NOT LONG NOW
779 05500 5304 JMP XOPR /SEPARATE THE IOTS FROM THE OPRS
780 05501 7200 CLA
781 05502 4766 JMS I (EXECUT /WE CAN CALL EXECUT "RECURSIVELY" HERE SINCE
782 05503 5227 JMP CIFLP /WE DON'T PLAN CN RETURNING FROM THIS LEVEL
783
784 05504 0365 XOPR, AND (6014 /7403 ROTATED LEFT 2
785 05505 1364 TAD (-6010 /7402 ROTATED LEFT 2
786 05506 7650 SNA CLA
787 05507 5763 JMP I (ILLIOT
788 05510 1170 XINLIN, TAD LINK
789 05511 7104 CLL RAL
790 05512 1166 TAD AC
791 05513 0000 WD, 0
792 05514 7410 SKP /WATCH FOR SKIPS AND ISZ'S
793 05515 2167 ISZ PC
794 05516 2167 ISZ PC
795 05517 7000 T7000, NOP /JUST IN CASE
796 05520 3166 DCA AC
797 05521 7010 RAR
798 05522 3170 DCA LINK
799 05523 5227 JMP CIFLP

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800 /INTERPRET JMP OR JMS
801
802 05524 7200 JMPJMS, CLA
803 05525 4243 JMS GEFAOR /GET EFFECTIVE ADDRESS
804 05526 1350 TAD IBR
805 05527 4776 JMS I (GETPLD /GET TARGET FIE.D
806 05530 3175 DCA UCIF+1
807 05531 1350 TAD IBR
808 05532 3177 DCA UIF
809 05533 4174 JMS UCIF
810 05534 1313 TAO WO
811 05535 7006 RTL /CHECK FOR JMS
812 05536 7710 SPA CLA
813 05537 9344 JMP XJMP /NO
814 05540 7201 CLA IAC
815 05541 1167 TAO PC
816 05542 3747 DCA I WT /SAVE RETURN ADDRESS
817 05543 7201 CLA IAC /AND BUMP JUMP ADDRESS
818 05544 1347 XJMP, TAO WT
819 05545 3167 DCA PC
820 05546 5762 JMP I (GDBCKX
821
822 05547 0000 WT, 0
823 05550 0000 IBR, 0
824 05562 5135
825 05563 5063
826 05564 1770
827 05565 6014
828 05566 4654
829 05567 7770
830 05570 0400
831 05571 0200
832 05572 0177
833 05573 0747
834 05574 4641
835 05575 4670
836 05576 5727
837 05577 0070
838 5600 PAGE
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839 /ROUTINE TO HANDLE SPECIAL OS/8 HANDLER IOT
840
841 /FORMAT OF SPECIAL IOT USAGE IS AS FOLLOWS:
842
843 / TAD (INTERNAL DEVICE CODE
844 / 6000 /DATA FIELD IS FIELD OF HANDLER ARGUMENTS
845 / POINTER TO OS/8 HANDLER ENTRY POINT
846 / RETURN IS TO THE ERROR OR NORMAL RETURN OF THE HANDLER
847
848 05600 4174 HCALL, JMS UCIF
849 05601 2167 I9Z PC /GO TO NEXT WO
850 05602 1567 TAD I PC
851 05603 3167 DCA PC /PC CONTAINS HANDLER ENTRY PT ADDR
852 05604 1567 TAD I PC
853 05605 3167 DCA PC /PC CONTAINS ARGUMENT LIST ADDR
854
855 05606 1172 IPDEF 050F
856 05607 1377 TAD UCOP+1
857 05610 7650 TAD (=COP-050F)
858 05611 1167 BNA CLA /IF WE ARE CALLING THE
859 05612 1376 TAD PC /KEYBOARD MONITOR,
860 05613 7440 TAO (=OSKBL
861 05614 1375 TAD (OSKBL=OSURL /USR,
862 05615 7440 SZA
863 05616 1374 TAD (OSURL=OSOLD /OR COMMAND DECODER INTO CORE,
864 05617 7640 SZA CLA /RELEASE THE 050F INTERLOCK
865 05620 5225 JMP NOPOST /SINCE THE USER DIRECTORY BUFFER IS CLEAR,
866 05621 1373 TAO (INTLOK
867 05622 4020 CAL
868 05623 0705 POST /050F INTERLOCK IS A STANDARD EVENT FLAG
869 05624 6201 CDF CUR /IN THE CURRENT FIELD
870
871 NOPOST,
872
873 05625 1166 TAD AC
874 05626 0372 AND (7760 /CHECK UNIT NUMBER LT 16.
875 05627 7640 SZA CLA
876 05630 5771 JMP I (ILLIOT /IF NOT, ILLEGAL IOT
877 05631 1370 TAD (MNDTAB
878 05632 1166 TAD AC
879 05633 3166 DCA AC
880 05634 4171 JMS UCDF /ARG LIST IN DATA FIELD
881 05635 1567 TAD I PC
882 05636 0367 AND (7707
883 05637 3322 DCA ARG0+1 /GET FIRST WORD EXCEPT FOR FIELD
884 05640 1567 TAD I PC
885 05641 0366 AND (70
886 05642 4327 JMS GETPLD /RELOCATE BUFFER FIELD
887 05643 0366 AND (70
888 05644 1322 TAD ARG0+1
889 05645 3322 DCA ARG0+1
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889 05646 2167 ISZ PC
890 05647 1967 TAD I PC
891 05650 3323 DCA ARG8+2
892 05651 2167 ISZ PC
893 05652 1967 TAD I PC
894 05653 3324 DCA ARG8+3
895 IFDEF 088F 4
896 05654 7201 CLA IAC
897 05655 1324 TAD ARG8+3
898 05656 0363 AND (7770 /IF THE I/O IS 'D A DIRECTORY BLOCK
899 05657 7450 SNA /WE MUST SET THE 088F INTERLOCK
900 05660 1326 TAD /((IF IT WAS CLEAR) TO PREVENT
901 05661 7650 SNA CLA /SIMULTANEOUS UPDATE OF
902 05662 2326 ISZ INTLOK /THE OS/8 DIRECTORY
903 >
904 05663 2167 ISZ PC
905 05664 7000 NOP /PROTECT AGAINST WIERO OR MALICIOUS BACKGROUNDERS
906 05665 6201 CDF CUR
907 05666 1566 TAD I AC /GET HANDLER TASK NUMBER
908 05667 7450 SNA
909 05670 5771 JMP I (ILLIOT /ILLEGAL HANDLER IOT
910 05671 7112 CLL RTR
911 05672 7010 RAR
912 05673 0364 AND (177 /IN BITS 3-8 OF TABLE ENTRY
913 05674 3302 DCA HTASK
914 05675 1566 TAD I AC /GET UNIT NUMBER
915 05676 0363 AND (7 /IN BITS 9-11
916 05677 3321 DCA ARG8
917 05700 4020 CAL
918 05701 0011 SENOW /SEND THE I/O REQUEST TO THE APPROPRIATE TASK
919 05702 0000 HTASK, 0
920 05703 5716 IOMESS /AND WAIT FOR COMPLETION
921 05704 1325 TAD IOST8 /USE RETURN STATUS TO DETERMINE
922 05705 7450 SNA /WHETHER WE HAVE A NORMAL OR ERROR RETURN
923 05706 2167 ISZ PC
924 05707 7640 SZA CLA /TRADITIONAL ERROR VALUE
925 05710 7330 AC4000
926 05711 3166 OCA AC
927 05712 1172 TAD UCDF+1
928 05713 7041 CIA
929 05714 1336 TAD FLDTBL /COMPUTE VIRTUAL RETURN OF
930 05715 5762 JMP I (HNDRET /RETURN FROM OS/8 HANDLER
931
932 05716 0000 IOMESS, ZBLCK 3 /HANDLER MESSAGE
933 05721 0000 ARG8, ZBLCK 4
934 05725 0000 IOST8, 0
935 05726 0000 INTLOK, 0 /OS8-088F INTERLOCK = 0 MEANS OIR FREE

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936 05727 0000 GETFLD, 0 /ROUTINE TO MAP FIELDS
937 05730 7112 CLL RTR
938 05731 7010 RAR
939 05732 1361 TAD (TAD FLDTBL
940 05733 3334 DCA ,+1 /THIS ROUTINE SHOULD LEAVE THE DF UNCHANGED
941 05734 7402 HLT
942 05735 5727 JMP I GETFLD
943
944 /TABLE OF REAL FIELDS
945
946 05736 6231 FLDTBL, CDF 088F0
947 05737 6221 CDF 088F1
948 05740 6231 CDF 088F2
949 05741 6221 CDF 088F3
950 05742 6231 CDF 088F4
951 05743 6221 CDF 088F5
952 05744 6231 CDF 088F6
953 05745 6221 CDF 088F7
954 05761 1336
955 05762 5132
956 05763 0007
957 05764 0177
958 05765 7770
959 05766 0070
960 05767 7707
961 05770 0030
962 05771 5063
963 05772 7760
964 05773 5726
965 05774 7432
966 05775 7746
967 05776 0107
968 05777 1557
969 0000 PAGE

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970 /OS8 FILE SUPPORT INTERLOCK TEST ROUTINE
971 /ON ENTRY, XR POINTS TO MNOTAB AND LENGTH=17(8)
972
973 IFDEF OS8F 4 /ONLY ASSEMBLED IF NEEDED
974 06000 0000 CKINTL, 0
975 06001 4020 WTINTL, CAL /WAIT FOR OS/8 TO REACH A STATE IN WHICH
976 06002 0002 WAITE /THERE IS NO POSSIBILITY OF AN ACTIVE
977 06003 5726 PINTLK, INTLOK /DIRECTORY BUFFER IN THE USR,
978 06004 1777 MNOLP, TAO I (FN
979 06005 0376 ANO (1777 /SEE IF OUR DEVICE IS IN THE OS/8 SYSTEM
980 06006 7041 CIA
981 06007 1416 TAO I XR /BY SEARCHING THE OS8 SUPPORT TASK'S
982 06010 7650 SNA CLA /TABLES FOR IT
983 06011 5215 JMP FNO080 /FOUND IT
984 06012 2161 ISZ LENGTH
985 06013 5204 JMP MNOLP /KEEP LOOKING
986 06014 5600 JMP I CKINTL /NOT THERE - NO INTERLOCK
987 06015 1016 FNO080, TAO XR
988 06016 1375 TAO (OS8OCB-1-MNOTAB
989 06017 3161 DCA LENGTH /GET POINTER INTO THE OCB ENTRY FOR THE
990 06020 6221 COF OS8F1 /DEVICE INVOLVED
991 06021 1561 TAO I LENGTH
992 06022 0374 AND (7 /CHECK FOR OPEN OUTPUT FILE ON THE DEVICE
993 06023 6201 COF CUR
994 06024 7650 SNA CLA
995 06025 5600 JMP I CKINTL /NONE - NO INTERLOCK
996 06026 2603 ISZ I PINTLK /OOPS - WE CAN'T TOUCH DIRECTORY NOW
997 06027 5201 JMP WTINTL /WAIT UNTIL THE NEXT QUIET MOMENT
998
999
1000 /TABLE OF CORRESPONDENCES BETWEEN OS/8 CODE NUMBER AND TASK NUMBER
1001
1002 06030 0000 MNOTAB, ZBLOCK 20 /FIRST WORD IS UNUSED - MUST BE 0

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1003 /TABLES FOR OS/8 SUPPORT TASK
1004
1005 /TABLE OF LEGAL IOT'S
1006
1007 06050 1564 IOTLST, -RDFI XROF
1008 06051 4742
1009 06052 1554 -RIFJ XRIJ
1010 06053 4732
1011 06054 1747 -KSFJ XKSF
1012 06055 5000
1013 06056 1746 -KCCJ XKCC
1014 06057 5010
1015 06060 1744 -KRJ XKRS
1016 06061 5023
1017 06062 1742 -KRBJ XKRJ
1018 06063 5007
1019 06064 1737 -TSFJ XTSF
1020 06065 5200
1021 06066 1736 -TCFJ XTCF
1022 06067 4670
1023 06070 1732 -TLJ XTLJ
1024 06071 5231
1025 06072 1112 -PSLJ XLLJ
1026 06073 5330
1027 06074 1117 -PSKFJ XSKF
1028 06075 5005
1029 06076 2000 -6000J HCALL
1030 06077 5600
1031 06100 0000 0
1032
1033 0044 LPTCNT= 44 /AS MUCH AS I CAN SPARE RIGHT NOW
1034 IFNDEF OS8F 3 /LPTCNT=LPTCNT+3
1035 06101 0000 LPMESG, ZBLOCK 6000 /UNPACKED ASCII, NO CRLF
1036 06104 0000 0 /DUMMY INPUT BUFFER WORD
1037 06105 0000 LPTBUF, ZBLOCK LPTCNT+1 /ASSURE 1 ZERO AT THE END
1038 06106 0000
1039
1040 06153 0015 ILIOMS, 15112
1041 06154 0012
1042 06155 0000 ZBLOCK OSFILL /WATCH GARBLING!
1043 06161 0310 "HJ" "AJ" "LJ" "TJ" "I" "AJ" "TJ" 14600
1044 06162 0301
1045 06163 0314
1046 06164 0324
1047 06165 0240
1048 06166 0301
1049 06167 0324
1050 06170 0240
1051 06171 4600
1052 06174 0007
1053 06175 1727
1054 06176 1777
1055 06177 6255
1056 6200

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1057 / OS/8 INITIALIZATION CODE - CREATES FAKE SYSTEM HEAD
1058 /AND ESTABLISHES RELATIONSHIP BETWEEN OS/8 DEVICE HANDLER NAMES
1059 /AND RTS-8 DRIVERS
1060
1061 0003 FIELD OS8PDX10
1062 4000 *4000 /A GOOD SAFE PLACE
1063
1064 34000 0000 INITDS, 0
1065 34001 6002 IDP /ALL KINDZA HAN(Y-PANKY GOING ONI
1066 IPNDEF LPT /BATCH IN PROGRESS FLAG
1067 P3IE /DISABLE LOSSE INTS, ENABLE LES INTS
1068 PCIE /DISABLE LES INTS, NDP DN LOSSE (I HOPE)
1069
1070 34002 6201 CDF 0
1071 34003 1777 TAD I (7777 /CLEAR OUT THE OS/8
1072 34004 0376 AND (4707 /BATCH IN PROGRESS FLAG
1073 34005 1375 TAD (1000 /BIT 2 ON TELLS DS/8 THAT RTS-8 IS RUNNING
1074 34006 3777 DCA I (7777 /AND SOFTWARE CORE SIZE
1075 34007 6201 INDVLP, CDF 0
1076 34010 1643 TAD I P7600
1077 34011 6231 CDF OS8P0
1078 34012 3643 DCA I P7600
1079 34013 6211 CDF 10
1080 34014 1643 TAD I P7600 /MOVE BOTH SYSTEM HEAD PAGES
1081 34015 6221 CDF OS8P1 /INTO THEIR FAKE FIELDS
1082 34016 3643 DCA I P7600
1083 34017 2243 I02 P7600
1084 34020 5207 JHP INDVLP
1085 34021 6201 CDF 0
1086 34022 1374 TAD (70INT
1087 34023 3775 DCA I (700LDC /SET UP TSS/8 "RAP VECTOR" IN RTS-8 EXEC
1088 34024 3772 DCA I (J00170 /MAKE SURE CORE IS SAVED WHEN WE CALL THE USR
1089 34025 6031 INOVHN, CDF OS8P0
1090 34026 1640 TAD I FKHN01
1091 34027 3641 DCA I FKHN02 /MOVE THE RTS-8 FAKE SYSTEM HANDLER INTO PLACE
1092 34030 2240 I02 FKHN01
1093 34031 2241 I02 FKHN02
1094 34032 2242 I02 FKHN0C
1095 34033 5225 JHP INDVHN
1096 34034 6212 CIF 10
1097 34035 4771 JMS I (7700 /LOAD THE OS/8 USR INTO CORE (REAL CORE)
1098 34036 0010 10
1099 34037 5770 JHP I (INIHNL
1100
1101 34040 4044 FKHN01, FAKHND
1102 34041 7607 FKHN02, 7607
1103 34042 7730 FKHN0C, FAKHND=FAKEND
1104 34043 7600 P7600, 7600

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address of 7600 attempt handler

USRJA

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1105 34170 4200
1106 34171 7700
1107 34172 7744
1108 34173 0200
1109 34174 4630
1110 34175 1000
1111 34176 4707
1112 34177 7777
1113 7607 FAKHND, RELOC 7607 /FAKE DS/8 SYSTEM HANDLER
1114
1115 37607+ 2253 FAKSYS, I02 DVNUM
1116 37610+ 2253 I02 DVNUM
1117 37611+ 2253 I02 DVNUM
1118 37612+ 2253 I02 DVNUM
1119 37613+ 2253 I02 DVNUM /17(8) ENTRY POINTS
1120
1121 37614+ 2253 I02 DVNUM
1122 37615+ 2253 I02 DVNUM
1123 37616+ 2253 I02 DVNUM
1124 37617+ 2253 I02 DVNUM
1125 37620+ 2253 I02 DVNUM
1126 37621+ 2253 I02 DVNUM
1127 37622+ 2253 I02 DVNUM
1128 37623+ 2253 I02 DVNUM
1129 37624+ 2253 I02 DVNUM
1130 37625+ 2253 I02 DVNUM
1131 37626+ 0017 P17, 17
1132 37627+ 7200 CLA /JUST IN CASE
1133 37630+ 1253 TAD DVNUM /GET ENTRY POINT NUMBER
1134 37631+ 7040 CMA
1135 37632+ 1245 TAD FAKTAD /TRANSFORM INTO "TAD" ON ENTRY POINT
1136 37633+ 3234 OCA *01
1137 37634+ 7402 HLT /GET CALLING ADDRESS
1138 37635+ 3255 DCA FAKPTR
1139 37636+ 7332 AC2000
1140 37637+ 1234 TAD *03 /NDM FORM A "OCA ENTRY POINT"
1141 37640+ 3242 DCA *02
1142 37641+ 1256 TAD FAKISZ
1143 37642+ 7402 HLT /RESTORE ENTRY POINT
1144 37643+ 1253 TAD DVNUM
1145 37644+ 7041 CIA
1146 37645+ 1226 FAKTAD, TAD P17 /GET RTS-8 INTERNAL REFERENCE NUMBER
1147 37646+ 3254 DCA FAKT
1148 37647+ 3253 DCA DVNUM /CLEAR DVNUM FOR NEXT CALL
1149 37650+ 1254 TAD FAKT
1150 37651+ 6000 6000 /MAGIC IDT
1151 37652+ 7655 FAKPTR /POINTER TO POINTER TO ANGLIST
1152
1153 37653+ 0000 DVNUM, 0
1154 37654+ 0000 FAKT, 0
1155 37655+ 0000 FAKPTR, 0
1156 37656+ 2253 FAKISZ, I02 DVNUM
1157 4114 RELOC
1158 4114 FAKEND=
1159 4200 PAGE

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1160      /LOOP WHICH RELATES OS/8 AND RTS HANDLERS
1161
1162      / *** CAN'T USE LITERALS ON THIS PAGE " 8,R, " 1975
1163
1164      34200 2260 INIHL, ISZ HPTR
1165      34201 1660 TAD I HPTR /GET NEXT HANDLER NAME
1166      34202 7450 SNA
1167      34203 5240 JMP ASDONE /NO MORE
1168      34204 3214 DCA ASNAM1
1169      34205 2260 ISZ HPTR
1170      34206 1660 TAD I HPTR
1171      34207 3215 DCA ASNAM2 /STORE HANDLER NAME IN "INQUIRE"
1172      34210 2260 ISZ HPTR
1173      34211 6212 CIF 10
1174      34212 4651 JMS I L200
1175      34213 0012 12 /IS HANDLER THERE? INQUIRE
1176      34214 0000 ASNAM1, 0
1177      34215 0000 ASNAM2, 0
1178      34216 0000 0
1179      34217 5200 JMP INIHL /HANDLER NOT IN SYSTEM CONFIGURATION
1180      34220 1215 TAD ASNAM2
1181      34221 1252 TAD POSHN
1182      34222 3257 DCA HNDPTR /GET POINTER INTO RESIDENT HANDLER TABLE
1183      34223 1215 TAD ASNAM2
1184      34224 1253 TAD PHNDTAB
1185      34225 3256 DCA HTBPTR /AND EQUIVALENT PTR INTO RTS=8 TABLE
1186      34226 6221 CDF OS8P1
1187      34227 1254 TAD PFAKSYS
1188      34230 1215 TAD ASNAM2 /ASSIGN ONE OF THE 17 ENTRY POINTS IN THE
1189      34231 3657 DCA I HNDPTR /FAKE SYSTEM HANDLER TO THIS DEVICE
1190      34232 6231 CDF OS8P0
1191      34233 1660 TAD I HPTR /GET THE RTS=8 TASK AND UNIT NUMBER
1192      34234 6201 CDF 0
1193      34235 3656 DCA I HTBPTR /MAKE THE CORRESPONDING ENTRY IN THE
1194      34236 6231 CDF OS8P0 /DS8 SUPPORT TASK TABLE
1195      34237 5200 JMP INIHL /GET THE NEXT HANDLER
1196
1197      34240 6212 ASDONE, CIF 10
1198      34241 4651 JMS I L200
1199      34242 0011 11 /KICK OUT THE USER USROUT
1200      34243 6231 CDF OS8P0
1201      34244 1655 TAD I PINITOS
1202      34245 3260 DCA HPTR
1203      34246 6203 CDF CIF 0
1204      34247 6001 ION
1205      34250 5660 JMP I HPTR /INTERRUPTS CAN GO BACK ON NOW
1206      /RETURN TO OS8SJP
1207
1208      34251 0200 L200, 200
1209      34252 7646 POSHN, OS8HND=1
1210      34253 6030 PHNDTAB, HNDTAB
1211      34254 7606 PFAKSYS, FAKSYS=1
1212      34255 4000 PINITOS, INITOS
1213      34256 6031 HTBPTR, HNDTAB+1
1214      34257 0000 HNDPTR, 0

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1214      /DEVICE CORRESPONDENCE TABLE
1215
1216      34260 4260 HPTR, .
1217
1218      34261 2331 DEVICE SYS
1219      34262 2300 OSSYSD*10
1220      34263 0100 DEVICE DSK
1221      34264 0423 OSSYSD*10
1222      34265 1300
1223      34266 0100
1224
1225      IFDEF DTA
1226      34267 0424 DEVICE DTA0
1227      34270 0160
1228      34271 0070 DTA*10+0
1229      34272 0424 DEVICE DTA1
1230      34273 0161
1231      34274 0071 DTA*10+1
1232      34275 0424 DEVICE DTA2
1233      34276 0162
1234      34277 0072 DTA*10+2
1235      34300 0424 DEVICE DTA3
1236      34301 0163
1237      34302 0073 DTA*10+3
1238      34303 0424 DEVICE DTA4
1239      34304 0164
1240      34305 0074 DTA*10+4
1241      34306 0424 DEVICE DTA5
1242      34307 0165
1243      34310 0075 DTA*10+5
1244      34311 0424 DEVICE DTA6
1245      34312 0166
1246      34313 0076 DTA*10+6
1247      34314 0424 DEVICE DTA7
1248      34315 0167
1249      34316 0077 DTA*10+7
1250

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DEVICE FLP

OSSYSD*10+1

now FLP is RTS8 task SFLP
with unit-number = 1

(Sys-handler is SFLP with unit=0!)

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1251			IPDEF RK8	4
1252	34317	2213	DEVICE RK80	
1253	34320	0160		
1254	34321	0100	RK8"10+0	
1255	34322	2213	DEVICE RK80	
1256	34323	0260		
1257	34324	0104	RK8"10+4	
1258	34325	2213	DEVICE RKA1	
1259	34326	0161		
1260	34327	0101	RK8"10+1	
1261	34330	2213	DEVICE RK01	
1262	34331	0261		
1263	34332	0105	RK8"10+5	
1264	34333	2213	DEVICE RKA2	
1265	34334	0162		
1266	34335	0102	RK8"10+2	
1267	34336	2213	DEVICE RK02	
1268	34337	0262		
1269	34340	0106	RK8"10+6	
1270	34341	2213	DEVICE RKA3	
1271	34342	0163		
1272	34343	0103	RK8"10+3	
1273	34344	2213	DEVICE RK03	
1274	34345	0263		
1275	34346	0107	RK8"10+7	
1276			>	
1277			IPDEF LTA	4
1278	34347	1424	DEVICE LTA0	
1279	34350	0160		
1280	34351	0060	LTA"10+0	
1281	34352	1424	DEVICE LTA1	
1282	34353	0161		
1283	34354	0061	LTA"10+1	
1284	34355	1424	DEVICE LTA2	
1285	34356	0162		
1286	34357	0062	LTA"10+2	
1287	34360	1424	DEVICE LTA3	
1288	34361	0163		
1289	34362	0063	LTA"10+3	
1290	34363	1424	DEVICE LTA4	
1291	34364	0164		
1292	34365	0064	LTA"10+4	
1293	34366	1424	DEVICE LTA5	
1294	34367	0165		
1295	34370	0065	LTA"10+5	
1296	34371	1424	DEVICE LTA6	
1297	34372	0166		
1298	34373	0066	LTA"10+6	
1299	34374	1424	DEVICE LTA7	
1300	34375	0167		
1301	34376	0067	LTA"10+7	
1302			>	
1303				
1304			IPDEF RX8A	4
1305	34377	2230	DEVICE RXA0	

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1306	34400	0160		
1307	34401	0170	RX8A"10+0	
1308	34402	2230	DEVICE RXA1	
1309	34403	0161		
1310	34404	0171	RX8A"10+1	
1311			>	
1312				
1313			IPDEF RX8B	4
1314			DEVICE RXB0	
1315			RX8B"10+0	
1316			DEVICE RXB1	
1317			RX8B"10+1	
1318			>	
1319				
1320			IPDEF RX8C	4
1321			DEVICE RXC0	
1322			RX8C"10+0	
1323			DEVICE RXC1	
1324			RX8C"10+1	
1325			>	
1326				
1327			IPDEF RX8D	4
1328			DEVICE RXD0	
1329			RX8D"10+0	
1330			DEVICE RXD1	
1331			RX8D"10+1	
1332			>	
1333				
1334			IPDEF OS8COM	4
1335			DEVICE RT8	
1336			OS8COM"10+038F0	
1337			>	
1338				
1339	34405	0000	0	
1340		4600	PAGE	
1341			>	

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1342      /OS/8 FILE SUPPORT TASK
1343
1344      IFNDEF OS8F  <XLIST 1>
1345      IFOEF  OS8F  <
1346
1347      /PROVIDES RTS-8 TASKS WITH THE FACILITY TO LOOKUP, ENTER
1348      /AND DELETE FILES IN OS/8 DIRECTORIES,
1349
1350      0020 TASK2= OS8F
1351      0000 CUR2= CUR
1352      0000 ININT2= 0
1353
1354      /THE FORMAT OF A MESSAGE TO THIS TASK IS:
1355      /WORD 1 MESSAGE EVENT FLAG
1356      /WORDS 2&3 RESERVED FOR RTS-8
1357      /WORD 4 FUNCTION WORD1
1358      /   BITS 0-1 00=LOOKUP, 10=DELETE, 010=1=ENTER
1359      /   BITS 3-8 TASK NUMBER OF DEVICE HANDLER
1360      /   BITS 9-11 UNIT NUMBER
1361      /WORD 5 POINTER TO FILE NAME
1362      /WORD 6 GETS A 0 IF SUCCESSFUL, ERROR CODE IF NOT
1363      /WORD 7 GETS BLOCK NUMBER AFTER SUCCESSFUL LOOKUP OR ENTER
1364      /WORD 8 GETS FILE LENGTH AFTER LOOKUP
1365      / SPECIFIES DESIRED FILE LENGTH ON ENTER
1366
1367      /PAGE 0 LOCATIONS:
1368
1369      0000 FIELD CURX10
1370      0016 *16
1371      00016 0000 XR, 0
1372
1373      0160 *160
1374      00160 0000 BLDCK, 0 /CURRENT BLOCK NUMBER
1375      00161 0000 LENGTH, 0 /CURRENT LENGTH
1376      00162 0000 PTNAME, 0 /POINTER TO FILE NAME
1377      00163 0000 NFILES, 0 /NUMBER OF FILES IN THIS SEGMENT
1378      00164 0000 ETMP, 0 /TEMPORARIES FOR "ENTER"
1379      00165 0000 EPTR, 0

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1380      6200 *6200
1381
1382      06200 4020 START2, CAL
1383      06201 0001 RECEIVE /WAIT FOR A MESSAGE AND PULL IT IN
1384      06202 0000 MADDR, 0
1385      06203 3260 DCA MSGCDF
1386      06204 4257 JMS MCDF /SET DF TO MESSAGE FIELD
1387      06205 1602 TAD I MADDR
1388      06206 3255 DCA FN /SAVE FUNCTION
1389      06207 2202 ISZ MADDR
1390      06210 1602 TAD I MADDR
1391      06211 3162 DCA PTNAME /SAVE PTR TO FILE NAME
1392      06212 2202 ISZ MADDR
1393      06213 6201 CDF CUR
1394      06214 1255 TAD FN
1395      06215 0377 AND (-7
1396      06216 3337 DCA UNIT /UNIT NUMBER IN BITS 9-11 OF FUNCTION WORD
1397      06217 1255 TAD FN
1398      06220 7112 CLL RTR
1399      06221 7010 RAR
1400      06222 0376 AND (-77 /HANDLER'S TASK NUMBER IN BITS 3-8
1401      06223 3315 DCA IDTASK
1402      06224 1255 TAD FN
1403      06225 7104 CLL RAL
1404      06226 7710 SPA CLA /FUNCTIONS ARE:
1405      06227 5265 JMP ENTER /0000=LOOKUP, 2000=DELETE, 4000&6000=ENTER
1406      06230 7620 SNL CLA
1407      06231 5262 JMP LOOKUP
1408      06232 4775 JMS I (PURGE /DELETE = PURGE FILE NAME FROM OS/8 DIRECTORY
1409      06233 7001 NOFILE, IAC /ERROR RETURN = SET STATUS CODE
1410      06234 4257 FINI, JMS MCDF
1411      06235 3602 DCA I MADDR /STORE STATUS CODE
1412      06236 2202 ISZ MADDR
1413      06237 1160 TAD BLDCK
1414      06240 3602 DCA I MADDR
1415      06241 2202 ISZ MADDR
1416      06242 1161 TAD LENGTH /STORE BLOCK NUMBER AND LENGTH IN MESSAGE
1417      06243 3602 DCA I MADDR
1418      IFDEF OS8 <
1419      06244 1374 TAD (OS8
1420      06245 4020 CAL /RESUME OS/8 EXECUTION
1421      06246 0003 RUN
1422      >
1423      06247 1260 TAD MSGCDF
1424      06250 3255 DCA MFCDF
1425      06251 1202 TAD MADDR
1426      06252 1373 TAD (-7
1427      06253 4020 CAL
1428      06254 0005 POST
1429
1430      06255 0000 FN, MFCDF, 0
1431      06256 5200 JMP START2 /POST MESSAGE EVENT FLAG
1432      /GET NEXT MESSAGE
1433
1434      06257 0000 MCDF, 0
1435      06260 7402 MSGCDF, MLY

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1435 06261 5657

JMP I MCDF

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/ OS/8 SUPPORT TASK FOR RTS-8

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1436 06262 4772 LOOKUP, JMS I (MSRCH /FIND FILE NAME IN DIRECTORY
1437 06263 5233 JMP NOFILE /NOT FOUND
1438 06264 5234 JMP FINI /FOUND.
1439
1440 06265 4775 ENTER, JMS I (PURGE /DELETE PREVIDLS COPY OF FILE
1441 06266 7000 NOP /FILE NOT FOUND - WHO CARES?
1442 06267 7326 AC0002
1443 06270 1202 TAD MADDR
1444 06271 3161 DCA LENGTH
1445 06272 4257 JMS MCDF
1446 06273 1561 TAD I LENGTH /GET DESIRED LENGTH
1447 06274 6201 CDF CUR
1448 06275 5771 JMP I (ENTERX
1449
1450 06276 0000 MRDCAT, 0 /DIRECTORY READ ROUTINE
1451 06277 3342 DCA DBLOCK /ENTER WITH BLCK NUMBER IN AC
1452 06300 4310 JMS MREADC /READ DIR BLK
1453 06301 1770 TAD I (DSTBLK
1454 06302 3160 DCA BLOCK /INITIALIZE BLCK NUMBER FROM DIRECTORY HEADER
1455 06303 1741 TAD I PDCNT
1456 06304 3163 DCA NFILES /INITIALIZE FILE COUNT
1457 06305 1367 TAD (DBODY-1
1458 06306 3016 DCA XR /INITIALIZE DIRECTORY FILE PTR
1459 06307 5676 JMP I MRDCAT
1460
1461 06310 0000 MREADC, 0 /LOW-LEVEL DIRECTORY READ/WRITE ROUTINE
1462 06311 1366 TAD (200*CUR
1463 06312 3340 DCA IOCTLW /STORE READ OR WRITE CONTROL WORD
1464 06313 4020 CAL
1465 06314 0011 SENDW
1466 06315 0000 IOTASK, 0
1467 06316 6334 IOMSG
1468 06317 1343 TAD IOSTAT
1469 06320 7440 SZA
1470 06321 5234 JMP FINI /I/O ERROR - RETURN I/O STATUS AS ERROR
1471 06322 1741 TAD I PDCNT
1472 06323 7140 CMA CLL
1473 06324 1765 TAD I (DLINK
1474 06325 0364 AND (7700
1475 06326 7420 SNL /VALIDATE THE DIRECTORY BUFFER
1476 06327 7640 SZA CLA
1477 06330 7410 SKP /BAD
1478 06331 5710 JMP I MREADC
1479 06332 7330 AC4000
1480 06333 5234 JMP FINI /ERROR 4000 - BAD OS/8 DIRECTORY BLOCK

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1481	06334	0000	IOMSG, ZBLOCK 3	
1482	06337	0000	UNIT, 0	/UNIT NUMBER
1483	06340	0000	IOCTLW, 0	/I/O CONTROL WOFO
1484	06341	7200	POCNT, DBUF	/BUFFER PTR
1485	06342	0000	DBLOCK, 0	/BLOCK NUMBER
1486	06343	0000	IOSTAT, 0	/COMPLETION STATUS
1487				
1488	06344	0000	MEOVLS, ZBLOCK 10	/TEMPORARY STORAGE FOR DIRECTORY EXPANDER
1489	06364	7700		
1490	06365	7202		
1491	06366	0200		
1492	06367	7204		
1493	06370	7201		
1494	06371	6400		
1495	06372	6600		
1496	06373	7771		
1497	06374	0023		
1498	06375	6661		
1499	06376	0077		
1500	06377	0007		
1501		6400		

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1502	06400	3161	ENTERX, DCA	LENGTH	/STORE DESIRED LENGTH
1503	06401	3165	RENTX, DCA	EPTR	/SET FOUND POINTER TO 0
1504	06402	7201	CLA IAC		
1505	06403	4777	ENSEGL, JMS I	(MRDCAT	/GET NEXT DIRECTORY SEGMENT
1506	06404	1416	ENSRL, TAD I	XR	/GET NEXT ENTRY
1507	06405	7650	SNA CLA		
1508	06406	5227	JMP	EMPTY	/IT'S EMPTY
1509	06407	7346	AC7775		/IT'S A FILE - SKIP IT
1510	06410	4776	JMS I	(BUMPXR	
1511	06411	1416	TAD I	XR	
1512	06412	7041	ELEND, CIA		
1513	06413	1160	TAD	BLOCK	/UPDATE BLOCK NUMBER
1514	06414	3160	DCA	BLOCK	
1515	06415	2163	ISZ	NFILES	
1516	06416	5204	JMP	ENSRL	
1517	06417	1165	TAD	EPTR	
1518	06420	7640	SZA CLA		/DID WE FIND A SLITABLE EMPTY IN THIS SEGMENT?
1519	06421	5247	JMP	EINRTS	/YES
1520	06422	1775	TAD I	(OLINK	/NO - GO TO NEXT SEGMENT
1521	06423	7440	SZA		
1522	06424	5203	JMP	ENSEGL	
1523	06425	7326	ENTERR, AC0002		/NO MORE SEGMENTS - ENTER ERROR
1524	06426	5774	JMP I	(FINI	
1525					
1526	06427	1416	EMPTY, TAD I	XR	
1527	06430	3164	DCA	ETMP	/SAVE LENGTH OF EMPTY
1528	06431	1165	TAD	EPTR	
1529	06432	7640	SZA CLA		/DO WE ALREADY HAVE A GOOD EMPTY?
1530	06433	5245	JMP	ENOGD	/YES - DISREGARD THIS
1531	06434	7340	CLL STA		
1532	06435	1164	TAD	ETMP	
1533	06436	1161	TAD	LENGTH	
1534	06437	7620	SNL CLA		/IS IT LARGE ENOUGH?
1535	06440	5245	JMP	ENOGD	/NO
1536	06441	1016	TAD	XR	
1537	06442	3165	DCA	EPTR	
1538	06443	1160	TAD	BLOCK	
1539	06444	3325	DCA	EBLOCK	
1540	06445	1164	ENOGD, TAD	ETMP	
1541	06446	5212	JMP	ELEND	/UPDATE BLOCK NUMBER

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1542 06447 1816 EINRTS, TAO XR
1543 06450 3164 DCA ETHP /SAVE POINTER TO END OF SEGMENT
1544 06451 1565 TAO I EPTR /GET LENGTH OF 0100 EMPTY
1545 06452 1161 TAO LENGTH
1546 06453 7650 SNA CLA /CHECK FOR EXACT FIT
1547 06454 7326 AC0002 /YES = EMPTY WILL DISAPPEAR
1548 06455 1373 TAO (=4
1549 06456 4776 JMS I (BUMPXR
1550 06457 4345 JMS CKOVFL /CHECK SEGMENT OVERFLOW
1551 06460 4326 JMS MOVEUP
1552 06461 1565 TAO I EPTR
1553 06462 1161 TAO LENGTH
1554 06463 7450 SNA
1555 06464 2772 ISZ I (DBUF /REDUCE FILE COUNT BY 1 FOR KILLED EMPTY
1556 06465 7000 NOP
1557 06466 7440 SZA
1558 06467 3416 OCA I XR /OTHERWISE STORE UPDATED LENGTH
1559 06470 7240 STA
1560 06471 1164 TAO ETHP
1561 06472 3816 OCA XR /RESTORE END-OF-SEGMENT POINTER TO XR
1562 06473 1373 TAO (=4
1563 06474 3164 OCA ETHP
1564 06475 4771 JMS I (MCOF
1565 06476 1562 TAO I PTNAME
1566 06477 2162 ISZ PTNAME
1567 06500 6201 CDF CUR
1568 06501 3416 OCA I XR /MOVE FILE NAME INTO DIRECTORY SEGMENT
1569 06502 2164 ISZ ETHP
1570 06503 5275 JMP NMOVLP
1571 06504 6201 CDF 0
1572 06505 1770 TAO I (DATE
1573 06506 6201 CDF CUR
1574 06507 3416 OCA I XR /STORE SYSTEM DATE IN ADDITIONAL INFO WORD #1
1575 06510 7201 CLA IAC
1576 06511 4776 JMS I (BUMPXR
1577 06512 1161 TAO LENGTH
1578 06513 7041 CIA
1579 06514 3416 DCA I XR /STORE LENGTH OF NEW FILE
1580 06515 7240 STA
1581 06516 1772 TAO I (DBUF /INCREMENT FILE COUNT
1582 06517 3772 DCA I (DBUF
1583 06520 7330 AC4000 /WRITE THIS SEGMENT BACK OUT
1584 06521 4767 JMS I (MREADC
1585 06522 1325 TAO EBLOCK
1586 06523 3160 DCA BLOCK /RESTORE BLOCK FOR STORING INTO MESSAGE
1587 06524 5774 JMP I (FINI

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1588 06525 0000 EBLOCK, 0
1589
1590 06526 0000 MOVEUP, 0 /ROUTINE USED BY INTER AND "NOROOM"
1591 06527 1564 TAO I ETHP
1592 06530 3416 DCA I XR /TRANSFER A WORD
1593 06531 1164 TAO ETHP
1594 06532 7040 CMA
1595 06533 1165 TAO EPTR
1596 06534 7650 SNA CLA
1597 06535 5726 JMP I MOVEUP /ENOUGH WORDS = DONE
1598 06536 7240 STA
1599 06537 1164 TAO ETHP
1600 06540 3164 DCA ETHP
1601 06541 7344 AC7776
1602 06542 1016 TAO XR
1603 06543 3016 DCA XR
1604 06544 5327 JMP MOVEUP+1
1605
1606 06545 0000 CKOVFL, 0 /CHECK DIRECTORY SEGMENT OVERFLOW
1607 06546 1766 TAO I (DEXTRA
1608 06547 7041 CIA
1609 06550 1016 TAO XR /MUST BE ROOM FOR 1 DUMMY ENTRY
1610 06551 1365 TAO (=DBUF-372
1611 06552 7700 SNA CLA
1612 06553 5764 JMP I (NOROOM /THERE ISN'T = MUST ADJUST SEGMENTS
1613 06554 5745 JMP I CKOVFL
1614 06564 7000
1615 06565 0206
1616 06566 7204
1617 06567 6310
1618 06570 0040
1619 06571 6237
1620 06572 7200
1621 06573 7774
1622 06574 6234
1623 06575 7202
1624 06576 6651
1625 06577 6276
1626 6600 PAGE

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1627 06600 0000 MDSRCH, 0 /DIRECTORY SEARCH ROUTINE
1628 06601 7201 CLA IAC
1629 06602 4777 SRSEGL, JMS I (MRDCAT
1630 06603 1162 MDSRCL, TAD PTNAME
1631 06604 3260 DCA PTN /GET POINTER TO FILE NAME WORD 1
1632 06605 1376 TAD (-4
1633 06606 3257 DCA CT
1634 06607 1416 TAD I XR
1635 06610 7450 SNA /CHECK TYPE OF ENTRY
1636 06611 5237 JMP SKPMTF /EMPTY
1637 06612 7410 SKP /SKIP INTO SEARCH LOOP
1638 06613 1416 SRCWOL, TAD I XR
1639 06614 7041 CIA
1640 06615 4775 JMS I (MCDP
1641 06616 1660 TAD I PTN
1642 06617 2260 ISZ PTN
1643 06620 6201 CDF CUR
1644 06621 7640 SZA CLA /COMPARE FILE NAME AGAINST DIRECTORY ENTRY
1645 06622 5234 JMP NXTFIL
1646 06623 2257 ISZ CT
1647 06624 5213 JMP SRCWOL
1648 06625 4251 JMS BUMPXR /SUCCESSFUL MATCH
1649 06626 1416 TAD I XR /GET LENGTH WORD
1650 06627 7450 SNA
1651 06630 5240 JMP SKPMTF+1 /LENGTH 0 FILES ARE TENTATIVES
1652 06631 3161 DCA LENGTH
1653 06632 2200 ISZ MDSRCH
1654 06633 5600 JMP I MDSRCH /TAKE SKIP RETURN IF SUCCESS
1655
1656 06634 1257 NXTFIL, TAD CT
1657 06635 7001 IAC
1658 06636 4251 JMS BUMPXR /SKIP TO END OF FILE NAME IN SEGMENT
1659 06637 1416 SKPMTF, TAD I XR
1660 06640 7041 CIA
1661 06641 1160 TAD BLOCK /UPDATE BLOCK NUMBER
1662 06642 3160 DCA BLOCK
1663 06643 2163 ISZ NFILES
1664 06644 5203 JMP MDSRCL
1665 06645 1774 TAD I (DLINK /SEGMENT EXHAUSTED - ON TO NEXT SEGMENT
1666 06646 7450 SNA
1667 06647 5600 JMP I MDSRCH /NO NEXT SEGMENT - TAKE ERROR EXIT
1668 06650 5202 JMP SRSEGL
1669
1670 06651 0000 BUMPXR, 0
1671 06652 1773 TAD I (DEXTRA /GET NUMBER OF ADDITIONAL INFO WORDS
1672 06653 7041 CIA
1673 06654 1016 TAD XR /BUMP POINTER BY AC+A.I, WORDS
1674 06655 3016 DCA XR
1675 06656 5651 JMP I BUMPXR
1676
1677 06657 0000 CT, 0
1678 06660 0000 PTN, 0

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1679 06661 0000 PURGE, 0 /ROUTINE TO PURGE A FILE FROM THE DIRECTORY
1680 IFDEF OS8 /MUST INTERLOCK WITH BACKGROUND
1681 06662 1372 TAD (MNDTAB
1682 06663 3016 DCA XR /PREPARE TO CHECK OS/8 INTERLOCK
1683 06664 1371 TAD (-17
1684 06665 3161 DCA LENGTH
1685 06666 4770 JMS I (CKINTL /CHECK IT
1686 06667 1367 TAD (OS8 /MADE IT - SUSPEND OS/8
1687 06670 4020 CAL /SO WE WON'T HAVE ANY TROUBLE
1688 06671 0004 SUSPNO
1689
1690 06672 4200 JMS MDSRCH /END INTERLOCK (CONDITIONAL
1691 06673 5661 JMP I PURGE /SEARCH DIRECTORY FOR FILE NAME
1692 06674 2261 ISZ PURGE /NO SUCH FILE - ERROR EXIT
1693 06675 7344 AC7776
1694 06676 1016 TAD XR
1695 06677 3016 DCA XR /POINT XR AT LENGTH WORD - 1
1696 06700 1016 TAD XR
1697 06701 3363 DCA SGP
1698 06702 2363 ISZ SGP
1699 06703 3763 DCA I SGP /ZERO LENGTH WORD -1
1700 06704 7346 AC7775
1701 06705 1773 TAD I (DEXTRA
1702 06706 4350 JMS SQUISH /SQUISH OUT FILE NAME, LEAVING EMPTY
1703 06707 4313 JMS CONSOL /ELIMINATE PAIRS OF EMPTIES
1704 06710 7330 AC4000
1705 06711 4766 JMS I (MREAO /WRITE OUT THIS SEGMENT
1706 06712 5661 JMP I PURGE /AND RETURN
1707
1708 06713 0000 CONSOL, 0 /ROUTINE TO CONSOLIDATE A DIRECTORY
1709 06714 1373 TAD (BODY-1
1710 06715 3016 DCA XR
1711 06716 1765 TAD I (DBUF
1712 06717 3257 DCA CT
1713 06720 1416 CONLP, TAD I XR
1714 06721 7650 SNA CLA
1715 06722 5330 JMP PEMPTY /GOT AN EMPTY - CHECK FOR 2
1716 06723 1376 PSKIPF, TAD (-4
1717 06724 4251 JMS BUMPXR /SKIP PAST FILE NAMES
1718 06725 2257 ISZ CT
1719 06726 5320 JMP CONLP
1720 06727 5713 JMP I CONSOL /DONE - RETURN
1721
1722 06730 2016 PEMPTY, ISZ XR
1723 06731 1016 TAD XR
1724 06732 3350 DCA SQUISH /SAVE POINTER TO FIRST LENGTH WORD
1725 06733 2257 ISZ CT
1726 06734 7410 SKP
1727 06735 5713 JMP I CONSOL /LAST ENTRY WAS EMPTY - WE'RE DONE
1728 06736 1416 TAD I XR
1729 06737 7640 SZA CLA
1730 06740 5323 JMP PSKIPF /NON-EMPTY - NO SQUISH
1731 06741 1416 TAD I XR
1732 06742 1750 TAD I SQUISH
1733 06743 3750 DCA I SQUISH

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1734	06744	7344	AC7776	
1735	06745	4350	JMS	SQUISH /SQUISH OUT REDUNDANT EMPTY
1736	06746	2765	ISZ I	(DBUF
1737	06747	5314	JMP	CONSOL+1 /START ALL OVER AGAIN

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1738	06750	0000	SQUISH, 0	/LOW LEVEL COMPRESS ROUTINE
1739	06751	1016	TAD	XR
1740	06752	3363	DCA	SQP
1741	06753	1416	SQLOOP, TAD I	XR
1742	06754	2363	ISZ	SQP
1743	06755	3763	DCA I	SQP
1744	06756	1016	TAD	XR
1745	06757	1364	TAD	(=DBUF-377
1746	06760	7640	SZA CLA	
1747	06761	5353	JMP	SQLOOP
1748	06762	5750	JMP I	SQUISH
1749				
1750	06763	0000	SQP, 0	
1751	06764	0201		
1752	06765	7200		
1753	06766	6310		
1754	06767	0023		
1755	06770	6000		
1756	06771	7761		
1757	06772	6030		
1758	06773	7204		
1759	06774	7202		
1760	06775	6257		
1761	06776	7774		
1762	06777	6276		
1763		7000	PAGE	

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1764 07000 1777 NOROOM, TAD I (DLINK
1765 07001 7650 SNA CLA /LAST SEGMENT?
1766 07002 5255 JMP MELAST /YES = SPECIAL PROCEDURE
1767 07003 2776 ISZ I (DBUF /DECREASE ENTRY COUNT BY 1
1768 07004 7330 AC4000
1769 07005 4775 JMS I (MREADC /WRITE OUT THIS SEGMENT
1770 07006 4324 JMS MSKIP /FIND END OF SHORT SEGMENT
1771 07007 3346 DCA MEFCNT /INITIALIZE LENGTH COUNTER
1772 07010 1374 TAD (MEOVLS=1
1773 07011 3165 DCA EPTR
1774 07012 1416 MVLPI, TAD I XR
1775 07013 2165 ISZ EPTR
1776 07014 3565 DCA I EPTR
1777 07015 2346 ISZ MEFCNT
1778 07016 1016 TAD XR
1779 07017 7041 CIA
1780 07020 1164 TAD ETMP /MOVE LAST FILE NAME TO SAFE PLACE
1781 07021 7640 SZA CLA
1782 07022 5212 JMP MVLPI
1783 07023 1564 TAD I ETMP
1784 07024 3347 DCA MEFCNT /SAVE LENGTH OF LIST ENTRY
1785 07025 1777 TAD I (DLINK
1786 07026 4773 JMS I (MROCAT
1787 07027 4772 JMS I (CONSOL /PRE-SQUISH NEW SEGMENT
1788 07030 1771 TAD I (DSTBLK
1789 07031 1347 TAD MEFCNT /BUMP DOWN FILE ORIGIN
1790 07032 3771 DCA I (DSTBLK
1791 07033 4324 JMS MSKIP /FIND END OF SEGMENT
1792 07034 1016 TAD XR
1793 07035 3164 DCA ETMP
1794 07036 7240 STA
1795 07037 1346 TAD MEFCNT
1796 07040 1016 TAD XR
1797 07041 3016 DCA XR /BUMP XR BACK BY NEW FILE ENTRY LENGTH
1798 07042 1370 TAD (DBODY+1
1799 07043 3165 DCA EPTR
1800 07044 4767 JMS I (MOVEUP
1801 07045 1374 TAD (MEOVLS=1
1802 07046 3016 DCA XR
1803 07047 7240 STA
1804 07050 1776 TAD I (DBUF
1805 07051 3776 DCA I (DBUF /INCREASE ENTRY COUNT
1806 07052 1346 TAD MEFCNT
1807 07053 7041 CIA
1808 07054 5305 JMP MECOMN
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1809 07055 1366 MELAST, TAD I (7 /MOVE 7 FILES INTO BRAND NEW SEGMENT
1810 07056 1776 TAD I (DBUF
1811 07057 3776 DCA I (DBUF /DECREASE ENTRY COUNT BY 7
1812 07060 4324 JMS MSKIP /FIND NEW END OF SEGMENT
1813 07061 1765 TAD I (DBLOCK
1814 07062 0366 AND (7
1815 07063 7001 IAC
1816 07064 3777 DCA I (DLINK /LINK THIS SEGMENT TO NEW ONE
1817 07065 1777 TAD I (DLINK
1818 07066 1364 TAD (=7
1819 07067 7700 SNA CLA /HAVE WE RUN OUT OF SEGMENTS?
1820 07070 5763 JMP I (ENTER /YES
1821 07071 7330 AC4000
1822 07072 4775 JMS I (MREADC /WRITE OUT TRUNCATED BLOCK
1823 07073 2765 ISZ I (DBLOCK /SET UP TO WRITE NEW BLOCK
1824 07074 1364 TAD (=7
1825 07075 3776 DCA I (DBUF
1826 07076 1347 TAD MEFCNT
1827 07077 7041 CIA
1828 07100 1771 TAD I (DSTBLK /NEW START BLOCK = OLD START BLOCK
1829 07101 3771 DCA I (DSTBLK /PLUS LENGTH OF OLD SEGMENT
1830 07102 3777 DCA I (DLINK /MARK AS NEW LAST SEGMENT
1831 07103 1016 TAD XR
1832 07104 1362 TAD (=DBUF=377 /MOVE TOP OF DIRECTORY DOWN
1833 07105 3346 MECOMN, DCA MEFCNT
1834 07106 1361 TAD (DBODY=1
1835 07107 3165 DCA EPTR
1836 07110 1416 MVLPI, TAD I XR
1837 07111 2165 ISZ EPTR
1838 07112 3565 DCA I EPTR /COPY NEW FILE INTO NEW SEGMENT
1839 07113 2346 ISZ MEFCNT
1840 07114 5310 JMP MVLPI
1841 07115 4324 JMS MSKIP /SKIP TO END OF SEGMENT
1842 07116 1016 TAD XR
1843 07117 3164 DCA ETMP /SAVE FOR POSSIBLE ITERATION
1844 07120 4760 JMS I (CKOVFL /CHECK FOR NEW SEGMENT OVERFLOW
1845 07121 7330 AC4000
1846 07122 4775 JMS I (MREADC /WRITE OUT SEGMENT
1847 07123 5757 JMP I (ENTER /START ENTER OVER AGAIN
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```

1848 07124 0000 MSKIPF, 0 /ROUTINE TO SKIP TO END OF SEGMENT
1849 07125 1776 TAD I (DBUF
1850 07126 3345 DCA MNOFIL
1851 07127 1361 TAD (DBODY-1
1852 07130 3016 DCA XR
1853 07131 3347 DCA MEOCNT /KEEP RUNNING LE10TH ON THE WAY
1854 07132 1416 MSKPLP, TAD I XR
1855 07133 7650 BNA CLA
1856 07134 5337 JMP MEOMTY
1857 07135 7346 AC7775
1858 07136 4756 JMS I (BUMPXR /BUMP PAST FILE NAME
1859 07137 1416 MEOMTY, TAD I XR
1860 07140 1347 TAD MEOCNT
1861 07141 3347 DCA MEOCNT /UPDATE LENGTH
1862 07142 2345 ISZ MNOFIL
1863 07143 5332 JMP MSKPLP
1864 07144 5724 JMP I MSKIPF
1865
1866 07145 0000 MNOFIL, 0
1867 07146 0000 MEOCNT, 0
1868 07147 0000 MEOCNT, 0
1869 07156 6651
1870 07157 6401
1871 07160 6545
1872 07161 7204
1873 07162 0201
1874 07163 6425
1875 07164 7771
1876 07165 6342
1877 07166 0007
1878 07167 6526
1879 07170 7206
1880 07171 7201
1881 07172 6713
1882 07173 6276
1883 07174 6343
1884 07175 6310
1885 07176 7200
1886 07177 7202
1887

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PAGE

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1888 07200 0000 DBUF, 0 /DIRECTORY BUFFER - FIRST WD IF FILE CY
1889 07201 0000 USTBLK, 0 /STARTING BLOCK FOR FILES IN THIS SEGMENT
1890 07202 0000 DLINK, 0 /LINK TO NEXT SEGMENT
1891 07203 0000 DOPTR, 0
1892 07204 0000 OEXTRA, 0 /NUMBER OF EXTRA WORDS PER FILE ENTRY
1893 07205 0000 OBODY, ZBLOCK 373 /BODY OF DIRECTOR'
1894

```

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AC	0166	ENSEGL	6403	IOSTS	5725	NCDF01	4672
AC0002	7326	ENSRCL	6404	IOTASK	6315	NETWT	0010
AC2000	7332	ENTER	6265	IDTST	6050	NFILES	0163
AC3777	7350	ENTERR	6425	IRBASE	4620	NMOVLP	6475
AC4000	7330	ENTERX	6400	IRCNT	5062	NOCOF	5412
AC7775	7346	EORHWT	0200	IREND	4630	NOCYRC	5043
AC7776	7344	EPTR	0165	IRGET	5060	NDFILE	6233
ARGS	5721	ETMP	0164	IRLEN	0010	NONRWT	4000
ASDONE	4240	EXECUT	4654	IRPUT	5061	NONSTD	5473
ASNAM1	4214	FAKEND	4114	I7600	5117	NOPOST	5625
ASNAM2	4215	FAKHND	4044	JMPJMS	5524	NOROOM	7000
BLKARG	0010	FAKISZ	7656	JSBITS	7746	NTASKS	0023
BLOCK	0160	FAKPTR	7655	KBINT	5025	NXTFIL	6634
BUMPXR	6651	FAKSYS	7607	KCCX	6302	OP	4647
CAL	4020	FAKT	7654	KRBX	6306	OSCDLO	0271
CHECKP	0001	FAKTAO	7645	KRSX	6304	OSFILL	0004
CIFLP	5427	FINI	6234	KSFEP	5057	OSFLDS	0002
CINT	6204	FKHNOG	4042	KSFY	6301	OSINIT	4607
CKINTL	6000	FKHND1	4040	LENGTH	0161	OSKBDV	0030
CKOVFL	6545	FKHND2	4041	LINK	0170	OSKBML	7671
CLKQLN	0020	FLDTBL	5736	LOOKUP	6262	OSSYSD	0010
CLKTYP	0000	FN	6255	LPBUF	5356	OSTTOD	0031
CLOCK	0001	FNOQSD	6015	LPBUCF	5357	OSUSRL	7723
COMMAN	0043	FREE	4000	LPMSG	6101	OSB	2023
CONLP	6720	F17	7626	LPT	0004	OSBDCB	7760
CONSOL	6713	GEFADR	5443	LPTBUF	6106	OSBF	0020
CSA	0013	GETFLD	5727	LPTCNT	0044	OSBF0	0030
CSAF	0014	GOBACK	4641	LTA	0006	OSBF1	0020
CT	6657	GOBCKX	5135	L200	4251	OSBF2	0030
CTLCHR	5040	MCALL	5600	MADDR	6202	OSBF3	0020
CUR	0000	HERTZ	0170	MBHALT	4725	OSBF4	0030
CUR2	0000	HGFLO	0030	MCOF	6257	OSBF5	0020
DATE	0040	HNDLP	6004	MCR	0005	OSBF6	0030
DBLOCK	6342	HNDUPTR	4257	MCREP	0041	OSBF7	0020
DBODY	7205	HNDRET	5132	MCRSYS	0001	OSBND	7647
DBUF	7200	HNDTAB	6030	MOSRCH	6600	OWBASE	1600
DERAIL	0007	HPTR	4260	MOSRCL	6603	OWCNT	5327
DEXTRA	7204	HTASK	5702	MECOMN	7105	OWGET	5325
DFSTUF	5400	HTBPT	4256	MEFCDF	6255	OWLEN	0020
DF32	0012	IBR	5550	MEFCNT	7146	OWPUT	5326
DLINK	7202	ICS	0016	MELAST	7055	PARTBL	420
ONEWT	0001	ILLIOLP	5067	MEOCNT	7147	PARTNS	0000
ODPTR	7203	ILLIUMS	6153	MEOMTY	7137	PC	0167
OSTBLK	7201	ILLIOT	5065	MEOVLS	6344	PCIE	0667
OTA	0007	IMOVNN	4025	MNOFIL	7145	PCPTLP	5104
DVNUM	7653	IMOVLP	4007	MOVEUP	6526	POCNT	6341
EAE	0001	INIMNL	4200	MWOCAT	6276	POP12	0000
EBLOCK	5525	INITOS	4000	MREAO	6310	POPBE	0001
EF	5227	INIWT	0000	MSGCOP	6260	PEMPTY	6730
EFNT	2000	INIWT2	0000	MSGTBL	1176	PFAK3Y	4254
EINRIS	6447	INTLOK	5726	MSGWT	0020	PHNOTA	4253
ELEND	6412	IOCTW	6340	MSKIPF	7124	PINITO	4255
EMPTY	6427	IONESS	5716	MSKPLP	7132	PINTLK	6003
ENABWT	0040	IONSG	6334	MVLP1	7012	POSHN	4252
ENOGO	6445	IOTAT	6343	MVLP2	7110	POST	0005

POSTDS 5424	TTINT 5272
PRNTPC 5075	TTY 0003
PSIE 6665	T7000 5517
PSKF 6661	UCDF 0171
PSKIPF 6723	UCIF 0174
PSLS 6666	UCIFX 4685
PT 4653	UIF 0177
PTN 6660	UNBARG 0012
PTNAME 0162	UNIT 6337
PURGE 6661	USERWT 0100
PWRF 0002	WAIYE 0002
PWRFAL 0001	WAIYM 4425
P7600 4043	WD 5513
RECEIV 0001	WT 5547
RENTER 6401	WTINTL 6001
REYBL 1414	XACOTO 4740
RF00 0011	XERET 4671
RKA 0010	XINLIN 5510
RUN 0003	XJMP 5544
RUNWT 1000	XKCC 5010
RX0A 0017	XKR0 5007
SEND 0000	XKR0 5023
SENDW 0011	XKSF 5000
SHERTZ 0074	XKSPWT 5207
SKPIN0 0006	XLLS 5330
SKPMTF 6637	XNOP 4670
SQLOOP 6753	XOPR 5504
SQP 6763	XOR 4733
SQUISH 6750	XR 0016
SRCHOL 6613	XROP 4742
SRPLP 4712	XRIF 4732
SRSEGL 6602	XSKP 5005
START 4600	XTCP 4670
START2 6200	XTLS 5231
STKBMN 5125	XTLSUB 5245
SUF 6274	XTSF 5200
SUNIT 0000	
SUSPND 0004	
SWAPPE 0021	
SWPWT 0400	
SYS 0010	
TASK 0023	
TASK2 0020	
TCFX 6312	
TFTABL 1367	
TLX 6316	
TODH 0037	
TODL 0036	
TSPEP 5324	
TSFX 6311	
TSINT 4630	
TSKX 6315	
TSTABL 1244	
TSHFLG 0035	
TSLLOC 0200	

ERRORS DETECTED: 0
LINKS GENERATED: 0

AC	279#	322	338	395	398	399	430	523	581	584
	654	657	686	790	796	872	877	878	907	914
	926									
AC0002	112#	721	1442	1523	1547					
AC2000	111#	361	1139							
AC3777	110#									
AC4000	109#	925	1479	1583	1704	1768	1821	1845		
AC7775	108#	1509	1700	1857						
AC7776	107#	1601	1693	1734						
AO	135#									
ARG3	882	887	888	891	894	897	916	933#		
ASDONE	1167	1197#								
ASNAM1	1168	1176#								
ASNAM2	1171	1177#	1180	1183	1188					
BLKARG	130#									
BLOCK	1374#	1413	1454	1513	1514	1538	1586	1661	1662	
BUMPR	1510	1549	1576	1648	1658	1670#	1675	1717	1838	
CAL	116#	294	298	575	667	867	917	975	1382	1420
	1427	1464	1687							
CHECKP	54#									
CIFLP	735#	782	799							
CINT	260#	328								
CKINTL	974#	986	995	1685						
CKOVFL	1550	1606#	1613	1844						
CLKQLN	95#									
CLKTYP	94#									
CLOCK	63#	93								
COMMAN	160#									
CONLP	1713#	1719								
CONSOL	1703	1708#	1720	1727	1737	1787				
CS	138#									
CSA	74#									
CSAF	75#									
CT	136	1633	1646	1656	1677#	1712	1718	1725		
CTLCHR	456	461#								
CUR	175	175	232#	277	869	906	993	1351	1359	1393
	1447	1462	1567	1573	1643					
CUR2	103	183	1351#							
DATE	166#	1572								
DBLOCK	1451	1485#	1813	1823						
DBDDY	1457	1709	1798	1834	1851	1893#				
DBUF	1484	1555	1581	1582	1610	1711	1736	1745	1757	1804
	1805	1810	1811	1825	1832	1849	1888#			
DERAIL	129#									
DEXTRA	1607	1671	1701	1892#						
DFSTUF	371	710#								
DF32	73#									
DLINK	1473	1520	1665	1764	1785	1816	1817	1838	1870#	
DNEW	149#									
DOPTR	1891#									
DSK	1221									
DSTBLK	1453	1788	1790	1828	1829	1889#				
DTA	69#	1225	1228	1231	1234	1237	1240	1243	1246	1249
DTA0	1226									
DTA1	1229									
DTA2	1232									
DTA3	1235									
DTA4	1238									
DTA5	1241									

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DTA6	1244									
DTA7	1247									
OVNUM	1115	1116	1117	1118	1119	1121	1122	1123	1124	1125
	1126	1127	1128	1129	1130	1133	1144	1148	1153#	1156
EAE	50#									
EBLOCK	1539	1585	1588#							
EF	562	564	577#							
EFMT	141#									
EINRTS	1519	1542#								
ELEND	1512#	1541								
EMPTY	1508	1526#								
ENABWT	146#									
ENDGO	1530	1535	1540#							
ENSEGL	1505#	1522								
ENSRCL	1506#	1516								
ENTER	1405	1440#								
ENTERR	1523#	1820								
ENTERX	1448	1502#								
EDRMWT	144#									
EPTR	1379#	1503	1517	1528	1537	1544	1552	1595	1773	1775
	1776	1799	1835	1837	1838					
ERROR	316	317								
ETMP	1378#	1527	1532	1540	1543	1560	1563	1569	1591	1593
	1599	1608	1780	1783	1793	1843				
EXECUT	330	346#	359	781						
FAKEND	1103	1158#								
FAKHND	1101	1103	1113#							
FAKISZ	1142	1156#								
FAKPTR	1138	1151	1155#							
FAKSYS	1115#	1210								
FAKT	1147	1149	1154#							
FAKTAD	1135	1146#								
FINI	1410#	1438	1470	1480	1524	1587				
FKHND0	1094	1103#								
FKHND1	1090	1092	1101#							
FKHND2	1091	1093	1102#							
FLOTBL	929	939	946#							
FW	978	1388	1394	1397	1402	1429#				
FND080	983	987#								
FREE	133#									
FX	446									
F17	1131#	1146								
GEFADR	741	749#	763	772	803					
GETFLO	718	805	885	936#	942					
GOBACK	331#	532	733							
GOBACKY	529#	820								
HCALL	848#	1030								
HERTZ	97#									
HGMFLD	52#	242	243	244	245	246	247	248	249	
HNDLP	978#	985								
HNDPTR	1182	1189	1213#							
HNDRET	526#	930								
HNDTAB	876	988	1002#	1209	1212	1681				
HPTR	1164	1165	1169	1170	1172	1191	1202	1205	1215#	
HTASK	913	919#								
HTBPTR	1185	1193	1212#							
IBR	727	729	804	807	823#					
ICS	76#									
ILTOLP	487#	492								
ILTOMS	485	1040#								

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OWLEN	304#	306	317	556	598	685	633	642		
OWPUT	602	603	606	649#						
PARTBL	159#									
PARTNS	55#									
PC	200#	327	340	340	358	362	374	426	499	512
	522	566	567	572	710	720	736	756	793	794
	815	819	849	850	851	852	853	858	888	883
	889	890	892	893	904	923				
PCIE	275#	1068								
PCPTLP	500#	510								
PDCNT	1455	1471	1484#							
PDP12	49#									
PDP8E	48#	297	444	619	620	623				
PEMPTY	1715	1722#								
PFAKSY	1187	1210#								
PHNOTA	1184	1209#								
PINITO	1201	1211#								
PINTLK	977#	996								
POSHN	1181	1200#								
POST	127#	868	1428							
POSTDS	117#	475	630	637	645					
PRNTPC	489	493#								
PSIE	273#	1067								
PSKF	272#	684	1027							
PSKIPF	1716#	1730								
PSLS	274#	687	1025							
PT	342#	373	377	378	379	385	386	387	194	397
PTN	1631	1641	1642	1678#						
PTNAME	1376#	1391	1565	1566	1630					
PURGE	1408	1440	1679#	1691	1692	1706				
PWRF	64#									
PWRFAL	51#									
P7600	1076	1078	1080	1082	1083	1104#				
RECEIV	123#	1383								
RELOC	1113	1157								
RENTER	1503#	1847								
REYBL	158#	159								
RF08	72#									
RKA0	1252									
RKA1	1258									
RKA2	1264									
RKA3	1270									
RKB0	1255									
RKB1	1261									
RKB2	1267									
RKB3	1273									
RK8	71#	87	102	1251	1254	1257	1260	1263	1266	1269
	1272	1275								
RTS8	1335									
RUN	125#	1421								
RUNWT	142#									
RXA0	1305									
RXA1	1308									
RXB0	1314									
RXB1	1316									
RXC0	1321									
RXC1	1323									
RXD0	1328									
RXD1	1330									
RXA	77#	1304	1307	1310						

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RX08	1313	1315	1317							
RX0C	1320	1322	1324							
RX0D	1327	1329	1331							
SEND	122#									
SENDW	131#	668	918	1465						
SHERTZ	98#									
SKPINS	128#	295	299							
SKPMTF	1636	1651	1659#							
SQLOOP	1741#	1747								
SOP	1697	1698	1699	1740	1742	1743	1750#			
SQUISH	1702	1724	1732	1733	1735	1738#	1748			
SPCWDL	1638#	1647								
SROPLP	377#	384								
SRSEGL	1629#	1668								
START	176	294#	303							
START2	184	1382#	1431							
STKBMN	313	521#								
SUF	261#	339								
SUNIT	103#									
SUSPND	126#	1688								
SWAPPE	70#	101	157	159						
SWPWT	143#									
SYS	102#	1218								
TASK	172	174	178	235#						
TASK2	180	182	186	1350#						
TCFX	268#	627								
TFTABL	155#	158	178	186						
TLX	270#	613	639							
TOOH	145#									
TOOL	164#									
TSFEF	559	644	647#							
TSFX	267#	619	624							
TSINT	322#	1086								
TSKY	269#	620								
TSTABL	153#	155	174	182						
TSWFLG	163#									
TSBLOC	258#	1087								
TTINT	296	618#	621							
TTY	65#									
TT000	743	795#								
UCDF	282#	284	336	357	402	525	527	596	601	611
	719	771	855	879	927					
UCIF	285#	287	334	502	503	508	528	529	571	735
	759	806	809	848						
UCIFX	347#	531								
UDC	135									
UIF	288#	393	493	526	731	808				
UNBARG	132#									
UNIT	1396	1482#								
USERWT	105#									
WAITE	124#	576	97A							
WAITM	118#									
WD	711	713	716	722	725	737	738	742	745	750
	753	760	774	791#	810					
WT	744	752	757	758	764	768	769	770	810	818
	822#									
WTINTL	975#	997								
XACSTO	399#									
YERET	359#	574								
XINLIN	746	7A#								

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06573	1548	1562	
06574	1524	1567	
06575	1520		
06576	1510	1549	1576
06577	1505		
06764	1745		
06765	1711	1736	
06766	1705		
06767	1686		
06770	1685		
06771	1683		
06772	1681		
06773	1671	1701	1709
06774	1665		
06775	1640		
06776	1632	1716	
06777	1629		
07156	1050		
07157	1047		
07160	1044		
07161	1034	1051	
07162	1032		
07163	1020		
07164	1010	1024	
07165	1013	1023	
07166	1009	1014	
07167	1000		
07170	1790		
07171	1700	1020	1029
07172	1707		
07173	1706		
07174	1772	1001	
07175	1769	1022	1044
07176	1767	1004	1005 1010 1011 1025 1049
07177	1764	1705	1016 1017 1030
34170	1099		
34171	1097		
34172	1000		
34173	1007		
34174	1006		
34175	1073		
34176	1072		
34177	1071	1074	

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/PARAMETERS FOR RTS=8 TASKS (VERSION PAL8-V9D 09/11/75 PAGE 1

1	/PARAMETERS FOR RTS=8 TASKS (VERSION 2)
2	/
3	/
4	/
5	/
6	/
7	/
8	/
9	/
10	/
11	/COPYRIGHT (C) 1974,1975 BY DIGITAL EQUIPMENT CORPORATION
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45
46      /RTS8 V2 EXEC PARAMETERS - EDITED BY JBER
47
48      0001 PDP0E=1
49      0000 PDP12=0
50      0001 EAE=1
51      0001 PWRPAL=1
52      0030 MGHFLD=30
53      0023 NTASKS=23
54      0001 CHECKPT=1
55      0000 PARTNS=0
56
57      / (THE N PARTITIONS ARE NUMBERED FROM 0 TO N-1)
58
59      /COMMON TASK NUMBERS - EDITED BY USER
60      /IT IS ADVISABLE TO DEFINE ALL TASKS HERE, NAMES GIVEN BELOW
61      /ARE USED BY SOME SYSTEM TASKS AND SHOULD BE DELETED FROM THIS
62      /LIST IF THE CORRESPONDING TASK IS NOT INCLUDED IN THE SYSTEM
63
64      0001 CLOCK=1
65      0002 PWRP=2
66      0003 TTY=3
67      0004 LPT=4
68      0005 MCR=5
69      0006 LTA=6
70      0007 OTA=7
71      0021 SWAPPER=21
72      0010 RK0=10
73      0011 RF00=11
74      0012 OF32=12
75      0013 CSA=13
76      0014 CSAF=14
77      0016 ICS=16
78      0017 RX0A=17
79      0023 OS0=NTASKS
80      0020 OS0F=20
81
82      /SOFTWARE PARAMETERS - EDITED BY USER
83
84      0002 OSFLDS=2
85      0030 OSK0DV=30
86      0031 OSTT0V=31
87      0010 OSSYS0=RK0
88      0004 OSFILL=4
89
90      0001 MCRSY0=1
91
92      0000 CLKTYP=0
93      0020 CLKQLN=20
94      0170 HERTZ=120
95      0074 SHERTZ=60
96      0000 DECIMAL
97      0000 OCTAL
98
99

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100      0001 SWAPPER=1
101      0001 IFDEF SWAPPER <
102      0010 SYS=RK0
103      0000 SUNIT=0
104

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105 /EQUIVALENCES:
106
107 7344 AC7776= CLL STA RAL
108 7346 AC7775= CLL STA RTL
109 7330 AC4000= CLA STL RAR
110 7350 AC3777= CLL STA RAR
111 7332 AC2880= CLA STL RTR
112 7326 AC0002= CLA STL RTL
113
114 /MONITOR CALL VALUES:
115
116 4020 CAL= JMS 20 /CALL THE EXECUTIVE
117 5424 POSTDS= JMP I 24 /DISMISS AN INTERRUPT
118 4425 WAITM= JMS I 25 /WAIT FOR MULTIPLE EVENTS
119
120 /NOTE: *** MEANS CRITICAL VALUE MAY NOT
121 /BE CHANGED WITHOUT MODIFYING SYSTEM CODE!!
122 0000 SEND= 0 /SEND MESSAGE
123 0001 RECEIVE= 1 /RECEIVE MESSAGE
124 0002 WAITE= 2 /WAIT FOR EVENT FLAG
125 0003 RUN= 3 /CONTINUE TASK EXECUTION
126 0004 SUSPND= 4 /SUSPEND TASK EXECUTION
127 0005 POST= 5 /POST AN EVENT FLAG
128 0006 SKPINS= 6 /INSERT CODE INTO INTERRUPT SKIP CHAIN
129 0007 OERAIL= 7 /INITIATE END-ACTION
130 0010 BLKARG= 10 /BLOCK TASK FOR REASON SPECIFIED IN ARG
131 0011 SENDM= 11 /SEND MESSAGE AND WAIT
132 0012 UNBARG= 12 /UNBLOCK TASK FOR REASON SPECIFIED IN ARG
133 4000 FREE= 4000 /**FREE PARTITION
134
135 IFDEF UDC <AO=0/DO=1/CI=1/CO=2/EC=4/RC=5
136 DC=6/ECT=7/CS=10/CT=11/CI=12>
137
138 /TASK STATUS FLAGS:
139
140 4000 NONRWT= 4000 /**NONRESIDENT TASK WAIT
141 2000 EFMT= 2000 /EVENT FLAG WAIT
142 1000 RUNWT= 1000 /SCHEDULE WAIT
143 0400 SWPWT= 0400 /**SWAPPER WAIT
144 0200 EORMWT= 0200 /EVENT FLAG OR MESSAGE WAIT
145 0100 USERWT= 0100 /USER SPECIFIED WAIT
146 0040 ENABWT= 0040 /ENABLE WAIT
147 0020 MSGWT= 0020 /MESSAGE WAIT
148 0010 NETWT= 0010 /NETWORK WAIT (RESERVED FOR POSSIBLE FUTURE USE)
149 0001 ONENT= 0001 /**DOES NOT EXIST WAIT

```

169

```

150 /SYSTEM LOCATIONS:
151
152 1176 MSGTBL= 1200+2 /TASK MESSAGE TABLE
153 1244 TSTABL= NTASKS*2+2+MSGTBL-4 /TASK STATE TABLE = HOLOS
154 1367 TFTABL= NTASKS*2+4+TSTABL-1 /TASK LINK,UN,OF,IF,PC,AC,MQ
155 /TASK FLAGS TABLE = HOLOS
156 /TASK STATUS FLAGS
157
158 1414 RESTBL= TFTABL+NTASKS*2 /RESIDENCY TABLE
159 1420 PARTBL= NTASKS-SWAPPER*2+RESTBL+327774 /PARTITION TABLE
160 0043 COMMAND=43 /SWAPPER COMMAND BUFFER
161
162
163 0035 TSWFLG= 35 /TASK SW INHIBIT FLAG IN FIELD 0
164 0036 TODL= 36 /LOW ORDER TIME OF DAY IN FIELD 0
165 0037 TODH= 37 /HIGH ORDER TIME OF DAY IN FIELD 0
166 0040 DATE= 40 /DATE IN OS8 FORMAT IN FIELD 0
167 0041 MCREP= 41 /MCR START EVENT FLAG IN FIELD 0
168

```

```

169
170 /TASK TABLE SETUP = "TASK", "CUR", "ININT", AND "START"
171 /MUST BE DEFINED BY TASK1
172
173 81284 1284 *TASK*8+MSGTSL
174 81284 0888 ZBLOCK 2 /MESSAGE BUFFER INITIALLY CLEAR
175 81284 1284 *TASK*8+TSTABL
176 81284 0888 CUR118+CUR /INITIAL FLAG8
177 81284 3488 START
178 81284 0888 8 /INITIAL AC 8
179 81372 0888 *TASK*TFYTABL
ININT

```

171

```

180 /3 TTY DRIVER TASK FOR RTS8 V2 4-AUG-75
181
182
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184
185
186
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213 /DIGITAL.
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224 / FEATURES ADDED BY S.R. ON 16-JUL-75:
225
226 /1. CTRL/S, CTRL/B
227 /2. AUTOMATIC CR/LF AFTER TTY WIDTH REACHED (USU 80 COLS)
228 /3. RE-ECHOING OF PROMPT LINES ON CTRL/U
229 /4. BACKSPACE FACILITY FOR RUBOUT IN SCOPE TERMINALS
230 /5. CTRL/U PRINTS "U"
231 /6. TAB OPTIONS
232 /7. FILL OPTIONS
233
234 / 4=AUS-75: COMBINED IN OLD TTY HANDLER
235
236 /TASK DATA BLOCK:
237
238 0000 CUR# 0
239 0000 INIT# 0
240 0000 IPNDEF KBOEV 4
241 KBOEV 00
242 TTDEV 00
243
244 0003 IPNDEF CONSOL <CONSOL=1> /DEFAULT IS CONSOLE
245 IPNDEF CONSOL <TASK= TTY>
246 IPNDEF TASK <TASK= 10> /A GOOD NUMBER FOR TESTING
247 IPNDEF VTSO <VTSO=1> /SET TO 0 IF DON'T WANT "S" "B" FEATURE
248 IPNDEF SCOPE <SCOPE=0> /SET TO 1 IF TTY CAN DO A BACKSPACE
249 IPNDEF FILL <FILL=0> /NUMBER OF FILL CHARACTERS AFTER CR/LF
250 IPNDEF WIDTH <WIDTH=120> /TTY LINE WIDTH
251 IPNDEF TAB <TAB=0> /SET TO 1 IF TTY HAS HARDWARE TABS
252 IPNDEF OLDTTY <OLDTTY=0> /SET TO 1 TO GET OLD VERSION 1 TTY TASK
253
254 6031 K0FX# K0DEV=10-6001
255 6032 KCCX# K0DEV=10-6002
256 6034 KRX# K0DEV=10-6004
257 6036 KRX# K0DEV=10-6006
258
259 6041 T0FX# TTDEV=10-6001
260 6042 TCFX# TTDEV=10-6002
261 6045 T0KX# TTDEV=10-6005 /PDP 8/E ONLY
262 6046 T0LX# TTDEV=10-6006

```

173

```

263 /THE RTSS TELETYPE DRIVER PRINTS AND INPUTS LINES OR CHARACTER
264 /STRINGS ON A TELETYPE, THE INPUT AND OUTPUT DEVICE CODES OF
265 /THE TELETYPE ARE SPECIFIED (RESPECTIVELY) BY THE PARAMETERS
266 /"KBOEV" AND "TTDEV". IF THE PARAMETER "CONSOL" IS NOT DEFINED TO
267 /BE ZERO, THE TELETYPE IS ASSUMED TO BE THE CONSOLE TELETYPE
268 /AND WILL INVOKE THE MCR WHENEVER "C" IS TYPED ON IT.
269
270 /THE FORMAT OF TTY DRIVER MESSAGES ARE:
271
272 /WORD 1 USED AS EVENT FLAG FOR MESSAGE
273 /WORDS 2-3 USED BY RTSS
274 /WORD 4 FLAG WORD - FLAG ARE:
275 / BIT 0 0=PACKED OUTPUT MESSAGE, 1=UNPACKED
276 / BIT 1 0=PUT CR/LF AFTER MESSAGE, 1=DO NOT
277 / BIT 2 0=OUTPUT MESSAGE BEGINS AT WORD 6, 1= OUTPUT MESSAGE
278 / POINTED TO BY WORD 6
279 / BIT 3 0=INPUT IS LINE ORIENTED, WITH EDITING
280 / 1=INPUT IS COLUMN ORIENTED W/O EDITING OR ECHOING
281 / BIT 4 0=PERFORM I/O INDICATED BY OTHER BITS
282 / 1=ASSIGN TTY DRIVER TO TASK IN BITS 5-11
283 / BITS 5-11 MAX 8 CHARS IN INPUT BUFFER (8 MEANS 4096)
284 / OR TASK TO ASSIGN DRIVER TO (IF BIT 4=1)
285 / IF ZERO, NO INPUT - ELSE POINTS AT INPUT BUFFER
286 /WORD 5 OUTPUT MESSAGE OR POINTER TO MESSAGE

```



```

383 /LOW=LEVEL TTY OUTPUT CODE
384
385 03521 0000 TTOUT, 0
386 03522 3360 DCA CDFM86
387 03523 6201 CDF CUR
388 03524 1771 TAD I (INCH /GET THE LAST CHAR TYPED ON THE KEYBOARD
389 03525 0370 AND (177 /STRIP OFF PARITY
390 03526 1367 TAD (=17 /WAS IT '0'?
391 03527 7650 SNA CLA
392 03530 5721 JMP I TTOUT /YES = DON'T PRINT NOTHIN
393
394 03531 4020 CAL IFNZRO VTSS0
395 03532 0002 WAITE /WAIT FOR XDN
396 03533 4020 XOFF
397
398 03534 4020 CAL
399 03535 0002 WAITE /WAIT FOR LAST CHAR TO FINISH
400 03536 3557 PTTDEV, TTDEV
401 03537 2357 ISZ TTDEV /SET TTY BUSY (IN ADVANCE)
402 03540 1360 TAD CDFM86 /GET CHAR
403 03541 0046 TLOX /OUT WITH IT
404 03542 7200 CLA /CL(E)A(N) UP
405 03543 5721 JMP I TTOUT
406
407 03544 0000 TTINT, ZBLOCK 2 /USED FOR LINKING INTD SKIP CHAIN
408
409 03546 6045 IFZERO POP8E 4TSFX>
410 03547 5744 IFNZRO POP8E 4TSKX> /CHECK FOR KEYBOARD OR PRINTER
411 03550 6203 JMP I TTINT
412 CDF CIP CUR
413 03551 6041 IFNZRO POP8E 4
414 03552 5766 TSFX /WHICH ONE?
415 JMP I (KBINT /KEYBOARD
416
416 03553 6202 CIP 0
417 03554 6042 TCFX
418 03555 1336 TAD PTTDEV
419 03556 5424 POSTDS /POST "TTY COMPLETE" EVENT FLAG
420
421 03557 0000 TTDEV, 0
422
423 03560 0000 CDFM86, 0
424 03561 7402 MSGCDF, HLT
425 03562 5760 JMP I CDFM86
426 03566 4000
427 03567 7761
428 03570 0177
429 03571 3716
430 03572 3600
431 03573 4042
432 03574 4051
433 03575 0240
434 03576 0077
435 03577 0200
436 3600

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PAGE

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```

437 /INPUT REPLY FROM KEYBOARD
438
439 03600 3315 EDMESS, OCA REPLY /SAVE REPLY BUFFER POINTER IN THIS PAGE
440 03601 6201 CDF CUR
441 03602 1777 TAD I (FLAGS
442 03603 0376 AND (177 /GET LOW ORDER BIT(1) OF FLAG WORD
443 03604 7041 CIA
444 03605 3262 RPLYL1, OCA INPCNT /SET INPUT CHAR COUNT
445 03606 4020 RPLYLP, CAL
446 03607 0002 WAITE
447 03610 4041 TTIEV
448 03611 2775 ISZ I /WAIT FOR KEYBOARD STRIKE
449 03612 1777 TAD I (FLAGS /IMMEDIATELY SET EVENT FLAG AGAIN
450 03613 4774 JMS I (CDFM86
451 03614 0373 AND (400 /ARE WE EDITING INPUT?
452 03615 7640 SZA CLA
453 03616 5310 JMP NOEDIT /NO = JUST TAKE IT AS IT COMES
454 03617 1316 TAD INCH
455 03620 0376 AND (177 /STRIP PARITY BIT
456 03621 1372 TAD (200 /NOW FORCE IT BACK IN
457 03622 3715 OCA I REPLY /SAVE CHAR IN REPLY MESSAGE
458 03623 1715 TAD I REPLY
459 03624 0376 AND (177 /AND OUT GOES THE PARITY BIT (AGAIN)
460 03625 7440 SZA
461 03626 1371 TAD (=17 /IGNORE NULL AND "C
462 03627 7450 SNA
463 03630 5206 JMP RPLYLP
464 03631 1370 TAD (17=176
465 03632 7540 SNA SZA
466 03633 5263 JMP RUBOUT /X = 176 GT 0 = X MUST BE 177
467 03634 7440 SZA
468 03635 7001 IAC
469 03636 7440 SZA
470 03637 1367 TAD (175=33 /CHECK FOR 3 FLAVORS OF ALTHDOE
471 03640 7450 SNA
472 03641 5301 JMP ALTHOD /ALT MODE IS SPECIAL END-OF-LINE DELIMITER
473 03642 1366 TAD (33=15
474 03643 7450 SNA
475 03644 5305 JMP CARRET /IS THE CHAR A CARRIAGE RETURN?
476 03645 6201 CDF CUR
477 03646 1365 TAD (15=25
478 03647 7650 SNA CLA /"U"?
479 03650 5317 JMP CTU /YES
480 03651 2262 ISZ INPCNT /IS THERE ROOM IN THE BUFFER?
481 03652 5255 JMP ,+3 /YES
482 03653 7240 STA
483 03654 5205 JMP RPLYL1 /NO = KEEP IT FULL
484 03655 4774 JMS I (CDFM86
485 03656 1715 TAD I REPLY /GET THE CHAR
486 03657 4764 JMS I (TTOUTR /ECHO IT
487 03660 2315 NEXTCH, ISZ REPLY /BUMP POINTER
488 03661 5206 JMP RPLYLP /CONTINUE
489
490 03662 0000 INPCNT, 0

```

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491          /SPECIAL CHARACTER PROCESSING
492
493 03663 6201 RUBOUT, CDF CUR
494 03664 1763 TAD I (REPLY /AC=1 ON ENTRY)
495 03665 7041 CIA
496 03666 1315 TAD REPLY /ARE WE AT THE BEGINNING
497 03667 7710 SPA CLA /OF THE REPLY LINE?
498 03670 5206 JMP RPLYLP /YES
499
500 03671 1362 IFZERO SCOPE 4
501 03672 4764 TAD (334
502 JMS I (TTOUTR /OUTPUT A BACKSLASH
503
504 IFZERO SCOPE 4
505 JMS I (BACK /DO BACKUP
506
507 03673 7240 STA
508 03674 1315 TAD REPLY
509 03675 3315 DCA REPLY /BUMP THE POINTER BACK ONE
510 03676 7240 STA
511 03677 1262 TAD INPCNT /REMEMBER TO INCREASE THE COUNT
512 03700 5205 JMP RPLYL1
513
514 03701 1361 ALTHOD, TAD (44
515 03702 4764 JMS I (TTOUTR /ECHO ALT MODE AS S
516 03703 7240 STA /PUT SPECIAL DELIMITER IN MESSAGE
517 03704 4774 JMS I (CDFMSG
518
519 03705 3715 CARRET, DCA I REPLY /SET THE LAST CHAR IN THE MESSAGE
520 03706 4760 JMS I (CRLF
521 03707 5757 JMP I (EORPLY
522
523 03710 1316 NOEDIT, TAD INCH
524 03711 3715 DCA I REPLY /NO PARITY, NO EDITING, NO ECHDING
525 03712 2262 ISZ INPCNT /IF CONSOL=0, THIS MODE CAN
526 03713 5260 JMP NEXTCH /BE USED TO READ BINARY PAPER TAPES
527 03714 5757 JMP I (EORPLY

```

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527 03715 0000 REPLY, 0
528 03716 0000 INCH, 0
529
530 03717 1356 CTU, TAD ("
531 03720 4764 JMS I (TTOUTR /TYPE "U"
532 03721 1355 TAD ("U
533 03722 4764 JMS I (TTOUTR
534 03723 1777 TAD I (FLAGS /IF BIT 1 IS ON, WANT TO REPROMPT
535 03724 7106 CLL RTL
536 03725 7620 SNL CLA
537 03726 5754 JMP I (CTRLU
538 03727 4760 JMS I (CRLF
539 03730 5753 JMP I (CTRLU2
540 03753 3434
541 03754 3476
542 03755 0325
543 03756 0336
544 03757 3502
545 03760 4042
546 03761 0044
547 03762 0334
548 03763 3517
549 03764 4051
550 03765 7770
551 03766 0016
552 03767 0142
553 03770 7621
554 03771 7761
555 03772 0200
556 03773 0400
557 03774 3560
558 03775 4041
559 03776 0177
560 03777 3401
561          4000

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PAGE

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```

562 /KEYBOARD INPUT INTERRUPT ROUTINE AND STORAGE
563
564 KBINT, IFZERO PDP&E 4
565 ZBLOCK 2 /FOR LINKING INTO SKIP CHAIN
566 KSPX
567 JMP I KBINT
568 CDF CIP CUR
569
570 04000 6036 KRBX
571 04001 3777 OCA I (INCH /READ CHARACTER AND CLEAR FLAG
572 IFZERO VT50 4
573 IFNZRO CONSOL 4
574 TAD I (INCH
575 AND (177
576 TAD (=3
577 SNA CLA /CHECK FOR "C TYPED
578 JMP GETHCR /YES = SET "MCI REQUESTED" EVENT FLAG
579
580
581 IFNZRO VT50 4
582 04002 1777 TAD I (INCH
583 04003 0376 AND (177
584 IFNZRO CONSOL 4
585 TAD (=3
586 SNA /CHECK FOR "C
587 JMP GETHCR /REQUEST MCR ON CTRL/C
588 04006 5233 TAD (3-23 /NOW CHECK FOR CTRL/S
589
590 IFZERO CONSOL 4
591 TAD (=23
592
593 SNA
594 JMP CTRL3 /"S TYPED (XOFF)
595 04012 1373 TAD (23-21
596 04013 7650 SNA CLA
597 04014 5225 JMP CTRLQ /"Q TYPED (XON)
598
599 CIP 0
600 TAD (TTIEV
601 04017 5424 POSTDS /POST "KEY STRUCK" EVENT FLAG

```

check AC
 AC → 30
 IV → 268
 ABCDEFGHIJKLMNOP
 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16

QRSTUVWXYZWXY2
 17 18 19 20 21 22 23 24 25 26

22w = 268

181

```

602 04020 0000 XOFF, IFNZRO VT50 4
603 0 /0 MEANS CAN PRINT
604 /1 MEANS PRINT INHIBITED DUE TO "S
605
606 04021 7201 CTRL3, CLA IAC
607 04022 3220 DCA XOFF /INHIBIT PRINTING
608 04023 6202 CIP 0
609 04024 5424 POSTDS /DISMISS, NO PL/CS POSTED
610
611 04025 1241 CTRLQ, TAD TTIEV
612 04026 7650 SNA CLA
613 04027 2241 ISZ TTIEV
614 04030 6202 CIP 0
615 04031 1371 TAD (XOFF
616 04032 5424 POSTDS /POST RESUME TYPING EVENT FLAG
617
618 IFNZRO CONSOL 4
619 04033 1241 GETHCR, TAD TTIEV
620 04034 7650 SNA CLA
621 04035 2241 ISZ TTIEV /"C WILL DELETE ANYTHING WHICH
622 04036 6203 CDF CIP 0 /IS CURRENTLY IN THE TTY BUFFER
623 04037 1370 TAD (MCREF /BY SETTING THE EVENT FLAG NON-ZERO
624 04040 5424 POSTDS /THE MCR IS STARTED UP (IF QUIESCENT) BY
625 /POSTING THE MCR EVENT FLAG IN PAGE 0
626 /OF FIELD 0.
627
628 04041 0001 TTIEV, 1 /KEYBOARD NOT STRUCK INITIALLY
629
630 BACK, IFNZRO SCOPE 4
631 0
632 TAD (10 /BACKSPACE
633 JMS I (TTOUT
634 TAD (240 /PRINT SPACE
635 JMS I (TTOUT
636 TAD (10 /BACKSPACE AGAIN
637 JMS I (TTOUT
638 STA
639 TAD COLCNT
640 SNA /CAN'T RUBOUT PAST COLUMN 1
641 DCA COLCNT /MOVE BACK ONE COLUMN
642 CLA /CLEAR AC
643 JMP I BACK /RETURN
644
645 04042 0000 CRLF, 0
646 04043 1367 TAD (215
647 04044 4766 JMS I (TTOUT
648 04045 1365 TAD (212
649 04046 4766 JMS I (TTOUT
650 IFZERO FILL=144000 <JMS I (TTOUT>
651 IFZERO FILL=284000 <JMS I (TTOUT>
652 IFZERO FILL=384000 <JMS I (TTOUT>
653 IFZERO FILL=484000 <JMS I (TTOUT>
654 IFZERO FILL=584000 <JMS I (TTOUT>
655 04047 3277 DCA COLCNT
656 04050 5642 JMP I CRLF

```

```

657 04051 0000 TTDUTR, 0
658 04052 3301 DCA TEM /SAVE CHAR
659 04053 1301 TAD TEM
660 04054 0376 AND (177 /7-BIT
661 04055 1364 TAD (-13 /IS IT CR?
662 04056 7450 SNA
663 04057 5275 JMP ITSCR /IT'S A CR
664 04058 1363 TAD (15=11
665 04061 7650 SNA CLA /IS IT A TAB?
666 04062 5314 JMP TABB /YES
667 04063 2277 DDO, ISZ COLCNT /AT END OF COLUMN?
668 04064 1277 SNO, TAD COLCNT
669 04065 7100 CLL
670 04066 1300 TAD WITH
671 04067 7430 SZL /AT LAST COLUMN? (DON'T CLEAR AC)
672 04070 4302 JMS NEWL /YES, DO EXTRA CR/LF
673 04071 7200 CLA
674 04072 1301 TAD TEM /NO
675 04073 4766 JMS I (TTOUT /ACTUALLY TYPE CHARACTER
676 04074 5651 JMP I TTOUTR /RETURN
677 04075 3277 ITSCR, DCA COLCNT
678 04076 5263 JMP DDO
679
680 04077 0000 COLCNT, 0
681 04100 7657 WITH, =WIDTH=1
682 04101 0000 TEM, 0
683
684 04102 0000 NEWL, 0
685 04103 3313 DCA XTRA
686 04104 4762 JMS I (CR/LF
687 04105 1313 TAD XTRA
688 04106 7640 SZA CLA
689 04107 1361 TAD (7 /IF LAST CHAR WAS TAB
690 04110 7001 IAC /SET INIT COL TO 10; OTHERWISE 1
691 04111 3277 DCA COLCNT
692 04112 5702 JMP I NEWL
693
694 04113 0000 XTRA, 0

```

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695
696 TABB, IFZERO TAB 4
697 TAD COLCNT
698 AND (7770
699 TAD (10
700 DCA COLCNT /GO TO NEXT TAB STOP
701 JMP SNO
702
703
704 04114 2277 TABB, IFZERO TAB 4
705 04115 1277 ISZ COLCNT
706 04116 1300 TAD COLCNT
707 04117 7650 SNA CLA WITH
708 04120 5330 JMP ED
709 04121 1360 TAD (7
710 04122 4766 JMS I (TTOUT /SIMULATE WITH SPACES
711 04123 1277 TAD COLCNT
712 04124 0361 AND (7
713 04125 7640 SZA CLA /UNTIL THE NEXT TAB STOP
714 04126 5314 JMP TABB
715 04127 5651 JMP I TTDUTR
716 04130 4762 ED, JMS I (CR/LF
717 04131 5651 JMP I TTOUTR
718
719 04160 0240
720 04161 0007
721 04162 4042
722 04163 0004
723 04164 7763
724 04165 0212
725 04166 3521
726 04167 0215
727 04170 0041
728 04171 4020
729 04172 4041
730 04173 0002
731 04174 7760
732 04175 7775
733 04176 0177
734 04177 3716
735 PAGE
736 4200
737

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```

831 /LOW-LEVEL TTY OUTPUT CODE
832
833 TTOUT, 0
834 DCA CDFMSG
835 CDF CUR
836 TAD I (INCH /GET THE LAST CHAR TYPED ON THE KEYBOARD
837 AND (177 /STRIP OFF PARITY
838 TAD (-17 /WAS IT "0"?
839 SNA CLA
840 JMP I TTOUT /YES = DON'T PRINT NOTHIN
841 CAL
842 WAITE /WAIT FOR LAST CHAR TO FINISH
843 PTTOEV, TTOEV
844 ISZ TTOEV /SET TTY BUSY (IN ADVANCE)
845 TAD CDFMSG /GET CHAR
846 TLSX /OUT WITH IT
847 CLA /CL(E)A(N) UP
848 JMP I TTOUT
849
850 CRLF, 0
851 TAD (215
852 JMS TTOUT
853 TAD (212
854 JMS TTOUT
855 JMP I CRLF
856
857 TTINT, ZBLOCK 2 /USED FOR LINKING INTO SKIP CHAIN
858 IFZERO POPBE «TSFX»
859 IFNZRO POPBE «TSKX» /CHECK FOR KEYBOARD OR PRINTER
860 JMP I TTINT
861 CDF CIP CUR
862 IFNZRO POPBE 4
863 TSFX /WHICH ONE?
864 JMP I (KBINT /KEYBOARD
865 >
866 CIP 0
867 TCFX
868 TAD PTTOEV
869 POSTOS /POST "TTY COMPLETE" EVENT FLAG
870
871 TTOEV, 0
872
873 CDFMSG, 0
874 MSGCDF, HLT
875 JMP I CDFMSG
876 PAGE

```

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```

877 /INPUT REPLY FROM KEYBOARD
878
879 EOMESS, DCA REPLY /SAVE REPLY BUFFER POINTER IN THIS PAGE
880 CDF CUR
881 TAD I (FLAGS
882 AND (177 /GET LOW ORDER BITS OF FLAG WORD
883 CIA
884 RPLYL1, DCA INPCNT /SET INPUT CHAR COUNT
885 RPLYLP, CAL
886 WAITE
887 PTTIEV, TTIEV /WAIT FOR KEYBOARD STRIKE
888 ISZ TTIEV /IMMEDIATELY SET EVENT FLAG AGAIN
889 TAD I (FLAGS
890 JMS I (CDFMSG
891 AND (400 /ARE WE EDITING INPUT?
892 SZA CLA
893 JMP NOEDIT /NO = JUST TAKE IT AS IT COMES
894 TAD INCH
895 AND (177 /STRIP PARITY BIT
896 TAD (200 /NOW FORCE IT BACK IN
897 DCA I REPLY /SAVE CHAR IN REPLY MESSAGE
898 TAD I REPLY
899 AND (177 /AND OUT GOES THE PARITY BIT (AGAIN)
900 SZA
901 TAD (-17 /IGNORE NULL AND "0"
902 SNA
903 JMP RPLYLP
904 TAD (17-176
905 SNA SZA
906 JMP RUBOUT /X = 176 GT 0 = X MUST BE 177
907 SZA
908 IAC
909 SZA
910 TAD (175-33 /CHECK FOR 3 FLAVORS OF ALTHODE
911 SNA
912 JMP ALTHOD /ALT MODE IS SPECIAL END-OF-LINE DELIMITER
913 TAD (33-15
914 SNA
915 JMP CARRET /IS THE CHAR A CARRIAGE RETURN?
916 CDF CUR
917 TAD (15-25
918 SNA CLA /"U"?
919 JMP I (CTRLU /YES
920 ISZ INPCNT /IS THERE ROOM IN THE BUFFER?
921 JMP .+3 /YES
922 STA
923 JMP RPLYL1 /NO = KEEP IT FULL
924 JMS I (CDFMSG
925 TAD I REPLY /GET THE CHAR
926 JMS I TTOUT /ECHO IT
927 NEXTCH, ISZ REPLY /BUFP POINTER
928 JMP RPLYLP /CONTINUE
929
930 INPCNT, 0

```

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931      /SPECIAL CHARACTER PROCESSING
932
933      RUBOUT, CDF CUR
934          TAO I (REPLY /AC=1 ON ENTRY)
935          CIA
936          TAD REPLY /ARE WE AT THE BEGINNING
937          SNA CLA /OF THE REPLY LINE?
938          JMP RPLYLP /YES
939          TAD (334
940          JMS I (TTOUT /OUTPUT A BACKSLASH
941          STA
942          TAD REPLY
943          DCA REPLY /BUMP THE POINTER BACK ONE
944          STA
945          TAO INPCNT /REMEMBER TO INCREASE THE COUNT!
946          JMP RPLYL1
947
948      ALTHMOD, TAD (44
949          JMS I (TTOUT /ECHO ALT MODE AS 8
950          STA /PUT SPECIAL DELIMITER IN MESSAGE
951          JMS I (CDFH88
952
953      CARRET, DCA I REPLY /SET THE LAST CHAR IN THE MESSAGE
954          JMS I (CRLF
955          JMP I (EORPLY
956
957      NOEDIT, TAD INCH
958          DCA I REPLY /NO PARITY, NO EDITING, NO ECHOING
959          ISZ INPCNT /IF CONSOL=0, THIS MODE CAN
960          JMP NEXTCH /BE USED TO READ BINARY PAPER TAPES
961          JMP I (EORPLY

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189

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962      /KEYBOARD INPUT INTERRUPT ROUTINE AND STORAGE
963
964      KBINT, IFZERO POPSE <
965          ZBLOCK 2 /FOR LINKING INTO SKIP CHAIN
966          KSPX
967          JMP I KBINT
968          CDF CIF CUR
969          >
970          KRBX
971          OCA INCH /READ CHARACTER AND CLEAR FLAG
972          IFNZRO CONSOL <
973          TAD INCH
974          AND (177
975          TAO (=3
976          SNA CLA /CHECK FOR "C TYPED
977          JMP GETHCR /YES = SET "MCR REQUESTED" EVENT FLAG
978          >
979          CIF 8
980          TAO PTIEV
981          POSTOS /POST "KEY STRUCK" EVENT FLAG
982
983          IFNZRO CONSOL <
984          GETHCR, TAD TTIEV /"C WILL DELETE ANYTHING WHICH
985          SNA CLA /IS CURRENTLY IN THE TTY BUFFER
986          ISZ TTIEV /BY SETTING THE EVENT FLAG NON=ZERO
987          CDF CIF 8 /THE MCR IS STARTED UP (IF QUIESCENT) BY
988          TAD (MCRF /POSTING THE MCR EVENT FLAG IN PAGE 8
989          POSTOS /OF FIELD 8.
990          >
991
992      REPLY, 8
993      INCH, 0
994      TTIEV, 1 /KEYBOARD NOT STRUCK INITIALLY
995      PAGE
996
997      >
998
999      $$$

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AC0002	7326	K0DEV	0003	SAVM	3520
AC2000	7332	K0INT	4000	SCOPE	0000
AC3777	7350	KCCX	6032	SEND	0000
AC4000	7350	KR0X	6036	SENDW	0011
AC7775	7346	KR0X	6034	SHERTZ	0074
AC7776	7344	K0FX	6031	SKPINS	0006
ALTM00	3701	LPT	0004	END	4064
ASGNEE	3516	LTA	0006	START	3400
ASSIGN	3512	MADDR	3406	SUNIT	0000
BLKARG	0010	MCR	0005	SUSPND	0004
CAL	4020	MCRFP	0041	SWAPPE	0021
CARRET	3705	MCR0Y8	0001	SWPWT	0400
CDPM00	3560	MEVFLG	3400	SV8	0010
CHECKP	0001	MF	3510	TAB	0000
CKCRLF	3473	M0G00P	3561	TAB0	4114
CLKQLN	0020	M0GT0L	1176	TASK	0003
CLKTYP	0000	M0GWT	0020	TCFX	6042
CLOCK	0001	NETWT	0010	TEM	4101
COLCNT	4077	NEWL	4102	TFTABL	1367
COMMAN	0043	NEXTCH	3660	TL0X	6046
CON00L	0001	NOEDIT	3710	TOOH	0037
CRLF	4042	NONRWT	4000	TOOL	0036
CSA	0013	NTASK8	0023	TSFX	6041
CSAF	0014	OLDTTY	0000	TSKX	6045
CTRLQ	4025	ONEPND	3467	T0TABL	1244
CTRLS	4021	OSFILL	0004	T0WFLG	0035
CTRLU	3476	OSFLOS	0002	TTDEV	0004
CTRLU2	3434	OSK00V	0030	TTIEV	4041
CTU	3717	OS0Y8D	0010	TYINT	3544
CUR	0000	OSTT0V	0031	TTMSLP	3403
DATE	0040	OS0	0023	TTDEV	3557
DERAIL	0007	OS0F	0020	TTOLP	3440
DF32	0012	OUTCH	3465	TTOUT	3521
DNEWT	0001	PART0L	1420	TTOUTR	4051
DOO	4063	PARTNS	0000	TTY	0003
DTA	0007	PDP12	0000	UNBARG	0012
EAE	0001	PDP0E	0001	USERWT	0100
EPWT	2000	POST	0005	VTS0	0001
ENABWT	0040	POST0S	5424	WAITE	0002
ED	4130	PTTDEV	3536	WAITM	4425
EDMESS	3600	PWRF	0002	WIDTH	0120
EORHWT	0200	PWRFAL	0001	WITH	4100
EORPLY	3502	RECEIV	0001	XOFF	4020
FILL	0000	REPLY	3715	XTRA	4113
FLAGS	3401	REPLYV	3517		
FREE	4000	REST0L	1414		
GETMCR	4033	RF00	0011		
HALF	3402	RGHHP	3455		
HERTZ	0170	RK0	0010		
HGHFLO	0030	RPLYLP	3606		
ICS	0016	RPLYL1	3605		
INCH	3716	RUBDUT	3663		
INIWT	0000	RUN	0003		
INPCNT	3662	RUNWT	1000		
ITSCR	4075	RX0A	0017		

ERRORS DETECTED: 0
LINKS GENERATED: 0

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194

RK8	710	87	102					
RPLYLP	445	463	488	498	885#	903	928	938
RPLYL1	444	483	511	884#	923	946		
RUBOUT	446	493	906	933#				
RUN	125#							
RUNWT	142#							
RX8A	77#							
SAVM	326	339	344	345	355	356	382#	
SCOPE	2400	240	499	503	629			
SEND	122#							
SENDW	131#							
SHERTZ	98#							
SKPTNS	120#	293	297	744	748			
SND	660#	780						
START	174	292	743#					
SUNIT	103#							
SUSPND	126#							
SWAPPZ	70#	101	137	159				
SWPHT	143#							
SYS	102#							
TAB	251#	251	695	703				
TABB	666	696	704#	714				
TABK	172	174	178	245	246#	246		
TCFX	260#	417	867					
TEM	650	659	674	682#				
TFTABL	155#	158	178					
TLBX	262#	403	846					
TODH	163#							
TODL	164#							
TSFX	259#	408	413	858	863			
TSKY	261#	409	859					
TSTABL	153#	155	174					
TSMFLG	163#							
TTDEV	242#	259	260	261	262			
TTIEV	447	448	680	611	613	619	621	627
	984	986	994#					887
TTINT	294	407	410	745	857#	860		
TTMSLP	300	373	751#	822				
TTDEV	400	401	421	843	844	871#		
TTOLP	331	353	780#	882				
TTOUT	385	392	485	632	634	636	647	649
	652	653	654	675	710	801	833#	840
	854	924	940	949				850
								852
TTOUTR	352	404	501	514	531	533	657#	676
TTY	65#	245						715
UDC	135							717
UNBARG	132#							
USERWT	145#							
VT50	247#	247	393	572	581	682		
WAITE	124#	395	399	446	842	886		
WALTM	110#							
WIDTH	250#	250	681					
WITH	670	681#	786					
XOFF	396	603#	687	615				
XTRA	685	687	698#					
±03566	414							
±03567	390							
±03570	389							
±03571	388							
±03572	365							

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±03573	362							
±03574	352							
±03575	349	351						
±03576	346	350	376					
±03577	316							
±03753	539							
±03754	537							
±03755	532							
±03756	530							
±03757	520	526						
±03760	519	530						
±03761	513							
±03762	500							
±03763	494							
±03764	486	501	514	531	533			
±03765	477							
±03766	473							
±03767	470							
±03770	464							
±03771	461							
±03772	456							
±03773	451							
±03774	450	484	516					
±03775	448							
±03776	442	455	459					
±03777	441	449	534					
±04160	709							
±04161	689	712						
±04162	686	716						
±04163	664							
±04164	661							
±04165	648							
±04166	647	649	675	710				
±04167	646							
±04170	623							
±04171	615							
±04172	600							
±04173	595							
±04174	588							
±04175	585							
±04176	583	660						
±04177	571	582						

V3

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1 /PARAMETERS FOR RTS-8 TASKS (VERSION 2)
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45 /RTS8 V2 EXEC PARAMETERS - EDITED BY USER
46 /
47 /
48 0001 PDP8E=1
49 0000 PDP12=0
50 0001 EAE=1
51 0001 PWRFL=1
52 0030 MGHFLD=30
53 0023 NTASKS=23
54 0001 CHECKPT=1
55 0000 PARTNS=0
56 /
57 /
58 /COMMON TASK NUMBERS - EDITED BY USER
59 /IT IS ADVISABLE TO DEFINE ALL TASKS HERE, NAMES GIVEN BELOW
60 /ARE USED BY SOME SYSTEM TASKS AND SHOULD BE DELETED FROM THIS
61 /LIST IF THE CORRESPONDING TASK IS NOT INCLUDED IN THE SYSTEM
62 /
63 0001 CLOCK=1
64 0002 PWRFL=2
65 0003 TTY=3
66 0004 LPT=4
67 0005 MCR=5
68 0006 LTA=6
69 0007 DTA=7
70 0021 SWAPPER=21
71 0010 RK8=10
72 0011 RF08=11
73 0012 DF32=12
74 0013 CSA=13
75 0014 CSAF=14
76 0016 ICS=16
77 0017 HX8A=17
78 0023 OS8=NTASKS
79 0020 OS8F=20
80 /
81 /SOFTWARE PARAMETERS - EDITED BY USER
82 /
83 IFDEF OS8 <
84 0002 OSFLOS=2
85 0030 OSKBDV=30
86 0031 OSTTDV=31
87 0010 OSSYSO=RK8
88 0004 OSFILL=4
89 /
90 IFDEF MCR <
91 0001 MCRSYS=1
92 /
93 IFDEF CLOCK <
94 0000 CLKTP=0
95 0020 CLKQLN=20
96 /
97 0170 HERTZ=120
98 0074 SHERTZ=60
99 /

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100      >
101      IFDEF SWAPPER <
102      0010 SYSRKS
103      0000 SUNIT=0
104      >

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105      /EQUIVALENCES:
106
107      7344 AC7776= CLL STA RAL
108      7346 AC7775= CLL STA RYL
109      7330 AC4000= CLA STL RAR
110      7350 AC3777= CLL STA RAR
111      7332 AC2000= CLA STL RTR
112      7326 AC0002= CLA STL RYL
113
114      /MONITOR CALL VALUES:
115
116      4020 CAL= JMS 20 /CALL THE EXECUTIVE
117      5424 POSTDS= JMP I 24 /DISMISS AN INTERRUPT
118      4425 WAITM= JMS I 25 /WAIT FOR MULTIPLE EVENTS
119
120      /NOTE: "*" MEANS CRITICAL. VALUE MAY NOT
121      /BE CHANGED WITHOUT MODIFYING SYSTEM CODE!!
122      0000 SEND= 0 /SEND MESSAGE
123      0001 RECEIV= 1 /RECEIVE MESSAGE
124      0002 WAITE= 2 /WAIT FOR EVENT FLAG
125      0003 RUN= 3 /CONTINUE TASK EXECUTION
126      0004 SUSPND= 4 /SUSPEND TASK EXECUTION
127      0005 POST= 5 /POST AN EVENT FLAG
128      0006 SKPINS= 6 /INSERT CODE INTO INTERRUPT SKIP CHAIN
129      0007 DERAII= 7 /INITIATE END-ACTION
130      0010 BLKARG= 10 /BLOCK TASK FOR REASON SPECIFIED IN ARG
131      0011 SENDW= 11 /SEND MESSAGE AND WAIT
132      0012 UNBARG= 12 /UNBLOCK TASK FOR REASON SPECIFIED IN ARG
133      4000 FREE= 4000 /**FREE PARTITION
134
135      IFDEF UDC <AD=0;DO=1;DI=2;GC=3;EC=4;RC=5
136      DC=6;ECT=7;CS=10;DI=11;AI=12>
137
138      /TASK STATUS FLAGS:
139
140      4000 NONRWT= 4000 /**NONRESIDENT TASK WAIT
141      2000 EFMT= 2000 /EVENT FLAG WAIT
142      1000 RUNWT= 1000 /SCHEDULE WAIT
143      0400 SWPWT= 0400 /**SWAPPER WAIT
144      0200 EORMWT= 0200 /EVENT FLAG OR MESSAGE WAIT
145      0100 USERWT= 0100 /USER SPECIFIED WAIT
146      0040 ENABWT= 0040 /ENABLE WAIT
147      0020 MSGWT= 0020 /MESSAGE WAIT
148      0010 NETWT= 0010 /NETWORK WAIT (RESERVED FOR POSSIBLE FUTURE USE)
149      0001 DNEWT= 0001 /**DDEES NOT EXIST WAIT

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150          /SYSTEM LOCATIONS:
151
152      1176 MSGTBL= 1200=2          /TASK MESSAGE TABLE
153      1244 TSTABL= NTASKS*2+MSGTBL=4 /TASK STATE TABLE = HOLDS
154
155      1367 TPTABL= NTASKS*2+TSTABL=1 /TASK LINK, UH, DP, IF, PC, AC, MO
156
157          IFDEF SWAPPER 4          /TASK FLAGS TABLE = HOLDS
158
159      1414 RESTBL= TPTABL+NTASKS*2    /TASK STATUS FLAGS
160
161      1420 PARTBL= NTASKS-SWAPPER*2+RESTBL+327774 /RESIDENCY TABLE
162
163      0043 COMMAND=43                /PARTITION TABLE
164
165          /SWAPPER COMMAND BUFFER
166
167      0035 TSHFLG= 35                /TASK SW INHIBIT FLAG IN FIELD 0
168
169      0036 TODL= 36                  /LOW ORDER TIME OF DAY IN FIELD 0
170
171      0037 TODH= 37                  /HIGH ORDER TIME OF DAY IN FIELD 0
172
173      0040 OATE= 40                  /DATE IN OSS FORMAT IN FIELD 0
174
175      0041 MCREP= 41                /MCR START EVENT FLAG IN FIELD 0
176
177
178
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169          /TASK TABLE SETUP = "TASK", "CUR", "INIW", AND "START"
170          /MUST BE DEFINED BY TASK:
171
172      1214          *TASK*2+MSGTBL
173      01214 0000    ZBLOCK 2          /MESSAGE BUFFER INITIALLY CLEAR
174
175      1300          *TASK*4+TSTABL
176      01300 0011    CURX10=CUR        /INITIAL FLAGS
177
178      01301 4600    START              /INITIAL AC 0
179
180      01302 0000    0
181
182      1376          *TASK+TPTABL
183      01376 0000    INIW
184
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/TC88 DRIVER FOR RT88 V2

8/30/74

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/ACCEPTS STANDARD MASS STORAGE TASK MESSAGE FORMAT

0007 TASK= DTA
0000 INIWT= 0
0010 CUR= 10

6762 DTCA= 6762
6764 DTXA= 6764
6774 DTLB= 6774
6771 DTSP= 6771
6761 DTRA= 6761
6772 DTRB= 6772
7755 DTACA= 7755
7754 DTAWC= 7754

0001 FIELD CURX10
4600 *4600

14600 4020 TMP, START, CAL
14601 0000 DONEPG, 8KPINS
14602 4677 INTRPT

204

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245 /MAIN HANDLER LOOP
246
247 14603 4020 LOOP, CAL
248 14604 0001 RECEIV
249 14605 0000 ADDR, 0 /GET A MESSAGE
250 14606 3273 DCA FLD
251 14607 7346 DTREDO, AC7775
252 14610 3777 DCA I (TRYCT /TRY 3 TIMES
253 14611 2201 ISZ DONEFG /INITIALIZE EVENT FLAG
254 14612 7240 STA
255 14613 1205 TAD ADDR
256 14614 3205 DCA ADDR
257 14615 4272 JMS GET
258 14616 0376 AND (7
259 14617 6211 CDF CUR
260 14620 3775 OCA I (UNIT
261 14621 4272 JMS GET
262 14622 6211 CDF CUR
263 14623 3774 DCA I (DPUN
264 14624 7240 STA
265 14625 4272 JMS GET
266 14626 6211 CDF CUR
267 14627 3773 DCA I (DLOC /GET OS/8 STYLE AR38
268 14630 4272 JMS GET
269 14631 7104 CLL RAL
270 14632 6211 CDF CUR
271 14633 3772 DCA I (DBLOCK /DOUBLE BLOCK NUMBER
272 14634 1371 TAD (PSTINT
273 14635 3317 DCA IDISP /INITIALIZE INTERRUPT DISPATCH
274 14636 6002 IOF
275 14637 4770 JMS I (SETU /INITIALIZE THE OPERATION
276 14640 1367 TAO (DTSP
277 14641 3301 DCA INTSKP /ENABLE INTERRUPT TEST
278 14642 6001 ION
279 14643 7000 NOP /BE NICE TO OTHER PEOPLE
280 14644 4020 CAL /AND THEY'LL KICK YOU IN THE TASK)
281 14645 0002 WAITE
282 14646 4601 PDONFG, DONEFG /WAIT FOR COMPLETION
283 14647 1201 TAD DDNEFG
284 14650 7650 SNA CLA /IF EVENT FLAG DID NOT COME UP,
285 14651 5256 JMP NOPFAL /BUT WE CAME OUT OF EVENT ANYWAY,
286 14652 7346 AC7775 /A POWER FAILURE MUST HAVE OCCURRED.
287 14653 1205 TAD ADDR
288 14654 3205 DCA ADDR
289 14655 5207 JMP DTREDO /TAKE IT FROM THE TOP
290 14656 4272 NOPFAL, JMS GET /THIS JUST SETS THE DF AND ADDR
291 14657 7600 P7600, 7600
292 14660 1270 TAD STATUS
293 14661 3605 DCA I ADDR
294 14662 1273 TAO FLD
295 14663 3270 DCA PFLO
296 14664 1205 TAO ADDR
297 14665 1366 TAO (7 /GET POINTER TO MESSAGE EVENT FLAG
298 14666 4020 CAL
299 14667 0005 POST

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205

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300 STATUS,
301 14670 7402 PFLD, HLT
302 14671 5203 JMP LOOP /GET ANOTHER MESSAGE
303
304 14672 0000 GET, 0
305 14673 7402 FLD, HLT
306 14674 2205 ISZ ADDR
307 14675 1605 TAO I ADDR
308 14676 5672 JMP I GET

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309 /INTERRUPT ROUTINE BEFORE DISPATCHING
310
311 14677 0000 INTRPT, 010 /CHAIN INTO SKIP CHAIN
312 14700 0000
313 14701 7200 INTSKP, CLA /OR DTSP
314 14702 5677 JMP I INTRPT
315 14703 6213 CDF CIF CUR
316 14704 6772 DTRB
317 14705 5717 JMP I IDISP /DISPATCH INTERRUPT
318
319 14706 3270 DSTOP, DCA STATUS
320 14707 6761 DTRA
321 14710 0365 AND (200
322 14711 1364 TAD /DISABLE INTERRUPTS WHEN TAPE THROUGH
323 14712 6764 DTXA /STOP TAPE, CLEAR ERRORS IN CONTROL
324 14713 1257 TAD P7600
325 14714 3301 DCA INTSKP
326 14715 1246 TAD POONPS
327 14716 5320 JMP IDISP+1
328
329 14717 7402 IDISP, HLT
330 14720 6202 CIF 0
331 14721 5424 POSTD8
332 14764 0006
333 14765 0200
334 14766 7771
335 14767 6771
336 14770 5022
337 14771 5005
338 14772 5043
339 14773 5062
340 14774 5061
341 14775 5064
342 14776 0007
343 14777 5060
344 5000 PAGE

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345 /SEARCH AND TRANSFER LOGIC
346
347 15000 1377 DTGO, TAD (200
348 15001 7430 DTGC, SZL
349 15002 1376 TAD (400
350 15003 6764 DTXA /START TAPE IN NIM (OLO) DIRECTION
351 15004 4775 RSTRT, JMS I (IDISP
352 15005 7700 FSTINT, SMA CLA
353 15006 5265 JMP CKBLNO /NO ERROR = CHECK FOR CORRECT BLOCK
354 15007 6772 DTRB
355 15010 7006 RTL
356 15011 7004 RAL
357 15012 7700 SMA CLA
358 15013 5200 JMP DTGO /NEAT TEST = ONL" SELECT ERROR BAD ON SEARCH, BUT
359 15014 2260 OTERR, ISZ TRYCT /SINCE ENDZONE FLAG IS IN LINK WE WILL REVERSE ON EZ
360 15015 5220 JMP TRYAGN /TRY THREE TIMES ON ERRORS
361 15016 6772 DTRB
362 15017 5774 JMP I (DSTOP /OTHERWISE RETURN WITH ERROR FLAGS IN STATUS
363 15020 4222 TRYAGN, JMS SETU /TRY AGAIN = REINITIALIZE OPERATION ON UNIT
364 15021 5204 JMP RSTRT /GO BACK INTO SEARCH WAIT
365
366 15022 0000 SETU, 0 /ROUTINE TO INITIALIZE DT OP
367 15023 6211 CDF CUR
368 15024 1264 TAO UNIT /GET UNIT NUMBER
369 15025 1373 TAD (BLKTAB
370 15026 3247 DCA UB /GET POINTER INTO CURRENT BLOCK TABLE
371 15027 1647 TAD I UB /GET POSITION OF TAPE
372 15030 1372 TAO (12
373 15031 7160 CMA STL /IF DESIRED BLOCK IS MORE THAN 10 DECIMAL BLOCKS
374 15032 1263 TAO DBLOCK /IN FRONT OF WHERE WE ARE, WE WANT
375 15033 7200 CLA /TO START FORWARD.
376 15034 1264 TAD UNIT
377 15035 7012 RTR
378 15036 7012 RTR
379 15037 1371 TAD (214 /IN EITHER CASE WE WANT TO SEARCH WITH
380 15040 6766 DTCA DTXA /INTERRUPTS ENABLED
381 15041 1370 TAD (CUR
382 15042 6774 DTLB
383 15043 6201 CDF 0 /AS A NEAT HACK WE TELL THE CONTROL
384 15044 1247 TAD UB /TO PLACE TAPE BLOCK NUMBERS DIRECTLY
385 15045 3767 DCA I (DTACA /INTO OUR CURRENT BLOCK NUMBER TABLE AS IT
386 15046 5622 JMP I SETU /FINDS THEM, SAVING US SOME WORK
387
388 15047 0000 UB, 0
389 15050 0000 BLKTAB, ZBLOCK 10 /ALL TAPES START REROUND
390
391 15060 0000 TRYCT, 0
392 15061 0000 OFUN, 0
393 15062 0000 OLOC, 0
394 15063 0000 DBLOCK, 0
395 15064 0000 UNIT, 0

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396 15065 6761 CKBLNO, DTRA
397 15066 7006 RTL
398 15067 7046 CMA RTL /DIRECTION IN LINK
399 15070 7020 SNL CLA
400 15071 7026 CNL RTL /SEARCH REVERSE 'O BLOCK=2
401 15072 1647 TAD I UB /GET BLOCK NUMBER FROM CONTROL BUFFER
402 15073 7041 CIA
403 15074 1263 TAD DBLOCK
404 15075 7650 SNA CLA
405 15076 7630 SZL CLA
406 15077 5201 JMP DTDC /A FEW LOCATIONS, A HAIRY ALGORITHM
407 15100 1262 TAD DLOC
408 15101 6201 CDF 0
409 15102 3767 DCA I (DTACA
410 15103 6211 CDF CUR
411 15104 1261 TAD DFUN /SET ADDRESS AND FIELD FOR TRANSFER
412 15105 6774 DTLO
413 15106 1261 TAD DFUN
414 15107 7104 CLL RAL
415 15110 0366 AND (7600
416 15111 3334 DCA DBLCT
417 15112 7004 RAL
418 15113 7001 IAC
419 15114 7126 STL RTL
420 15115 7006 RTL
421 15116 6764 DL, DTXA /START TRANSFER
422 15117 6201 CDF 0
423 15120 1366 TAD (7600
424 15121 3765 DCA I (DTAWC /SET WORD COUNT TO 120 WORDS
425 15122 4775 JMS I (IDIOP /GIVE SOMEONE ELSE A CHANCE
426 15123 2647 ISZ I UB /BUMP CURRENT TAPE BLOCK NUMBER
427 15124 7710 SNA CLA /ALL ERRORS DURING DATA TRANSFER ARE BAD
428 15125 5214 JMP DTERR
429 15126 1334 TAD DBLCT
430 15127 1366 TAD (7600
431 15130 7450 SNA
432 15131 5774 JMP I (DSTOP
433 15132 3334 DCA DBLCT
434 15133 5316 JMP DL
435
436 15134 0000 DBLCT, 0
437 15165 7754
438 15166 7600
439 15167 7755
440 15170 0010
441 15171 0214
442 15172 0012
443 15173 5050
444 15174 4706
445 15175 4717
446 15176 0400
447 15177 0200
448 5200
449

```

PAGE
89

209

```

AC0002 7326 INIWT 0000 THP 4600
AC2000 7332 INTRPT 4677 TODM 0037
AC3777 7350 INTSKP 4701 TODL 0036
AC4000 7330 LOOP 4603 TRYAGN 5020
AC7775 7346 LPT 0004 TRYCT 5060
AC7776 7344 LTA 0006 TSTABL 1244
ADDR 4605 MCR 0005 TSWFLG 0035
BLKARG 0010 MCREP 0041 TTY 0003
BLKTAB 5050 MCRSYS 0001 UB 5047
CAL 4020 MSGTBL 1176 UNBARG 0012
CHECKP 0001 MSGWT 0020 UNIT 5064
CKBLNO 5065 NETWT 0010 USERWT 0100
CLKQLN 0020 NONRWT 4000 WAITE 0002
CLKTYP 0000 NOPFAL 4656 WAITH 4425
CLOCK 0001 NTASKS 0023
COMHAN 0043 OSFILL 0004
CSA 0013 OSFLOS 0002
CSAF 0014 OSKBDV 0030
CUR 0010 OSSYSO 0010
DATE 0040 OSTTGV 0031
DBLCT 5134 OS 0023
DBLOCK 5063 OSOF 0020
DETRAIL 0007 PARTBL 1420
DFUN 5061 PARTNS 0000
OF32 0012 PDONFG 4646
OL 5116 POP12 0000
OLOC 5062 POPAE 0001
ONEWT 0001 PFLO 4670
ONEFG 4601 POST 0005
OSTOP 4706 POSTOS 5424
DTA 0007 PWRP 0002
DTACA 7755 PWRFAL 0001
DTAWC 7754 P7600 4657
DTCA 6762 RECEIV 0001
DTDC 5001 RESTBL 1414
DTERR 5014 RF00 0011
DTGO 5000 RKB 0010
DTLO 6774 RSTRT 5004
DTRA 6761 RUN 0003
DTRB 6772 RUNWT 1000
DTRDO 4607 RYSA 0017
DTSF 6771 SEND 0000
DTXA 6764 SENDW 0011
EAE 0001 SETU 5022
EFWT 2000 SHERTZ 0074
ENABWT 0040 SKPINS 0006
EORMWT 0200 START 4600
FLD 4673 STATUS 4670
FREE 4000 SUNIT 0000
FSTINT 5005 SUSPNO 0004
GET 4672 SWAPPE 0021
HERTZ 0170 SWPWT 0400
HGHFLD 0030 SYS 0010
ICS 0016 TASK 0007
IDISP 4717 TFTABL 1367

```

210

ERRORS DETECTED: 0
LINKS GENERATED: 0

211

AC0002	112#								
AC2000	111#								
AC3777	110#								
AC4000	109#								
AC7775	108#	251	266						
AC7776	107#								
ADDR	249#	255	256	267	268	293	296	306	307
AO	135#								
BLKARG	130#								
BLKTAB	369	369#							
CAL	116#	242	247	268	290				
CHECKP	54#								
CKBLNO	353	396#							
CLKQLN	95#								
CLKTYP	94#								
CLOCK	63#	93							
COMMAN	160#								
CS	138#								
CSA	74#								
CSAF	75#								
CT	136#								
CUR	175	175	220#	239	259	262	266	270	315
	381	410							367
DATE	166#								
DBLCT	416	429	433	436#					
DBLOCK	271	374	394#	403					
DERAIL	129#								
DFUN	263	392#	411	413					
DF32	73#								
DL	421#	434							
DLOC	267	393#	407						
DNEW	149#								
DONEFG	243#	253	282	283					
DSTOP	319#	362	432						
DTA	69#	226							
DTACA	236#	385	409						
DTAWC	237#	424							
DTCA	230#	360							
DTDC	348#	406							
DTERR	359#	420							
DTGO	347#	350							
DTLB	232#	362	412						
DTRA	234#	320	396						
DTRB	235#	316	354	361					
DTREDO	251#	289							
DTSF	233#	276							
DTXA	231#	323	350	380	421				
EAE	50#								
EFMT	141#								
ENABMT	146#								
EORHMT	144#								
FLO	250	294	305#						
FREE	133#								
FSTINT	272	352#							
GET	257	261	265	268	290	304#	308		
HERTZ	97#								
HGHFLD	52#								
IC8	76#								
IDISP	273	317	327	329#	351	425			

212

INIWT	179	227#				
INTRPT	244	311#	314			
INTSKP	277	313#	325			
LOOP	247#	302				
LPT	66#					
LTA	68#					
MCR	67#	98				
MCREP	167#					
MCRSYS	91#					
MSGTOL	152#	153	172			
MSGWT	147#					
NETWT	140#					
NOFFAL	285	290#				
NTASKS	53#	78	153	155	158	159
OSFILL	88#					
OSFLDS	84#					
OSKBDV	85#					
OSBSYSD	87#					
OSTIOV	86#					
OSB	78#	83				
OSBF	79#					
PARTOL	159#					
PARTNS	55#					
PDOFPG	282#	326				
PDP12	49#					
PDP8E	48#					
PFLO	295	381#				
POST	127#	299				
POSTDS	117#	331				
PHRF	64#					
PHRFAL	51#					
PT688	291#	324				
RECEIV	123#	248				
RESTOL	158#	159				
RF88	72#					
RK8	71#	87	182			
R8TRY	351#	364				
RUN	125#					
RUNWT	142#					
RX8A	77#					
SEND	122#					
SENDW	131#					
SETU	275	363	366#	386		
SHERTZ	98#					
SKPINS	120#	243				
START	176	242#				
STATUS	292	300#	319			
SUNIT	183#					
SUSPND	126#					
SWAPPE	70#	181	157	159		
SWPMT	143#					
SYS	182#					
TASK	172	174	178	226#		
TFTABL	155#	158	178			
TMP	241#					
TODH	165#					
TOOL	164#					
TRYAGN	360	363#				
TRYCT	252	359	391#			
TSTABL	153#	155	174			

213

TSHFLG	163#					
TTY	65#					
UB	378	371	384	388#	481	426
UDC	135					
UNBARG	132#					
UNIT	268	368	376	395#		
USERWT	145#					
WAITE	124#	281				
WAITM	118#					
+14764	322					
+14765	321					
+14766	297					
+14767	276					
+14770	275					
+14771	272					
+14772	271					
+14773	267					
+14774	263					
+14775	260					
+14776	258					
+14777	252					
+15165	424					
+15166	415	423	438			
+15167	385	409				
+15170	381					
+15171	379					
+15172	372					
+15173	369					
+15174	362	432				
+15175	351	425				
+15176	349					
+15177	347					

V3

214

```

1 /PARAMETERS FOR RTS-8 TASKS (VERSION 2)
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12 /COPYRIGHT (C) 1974,1975 BY DIGITAL EQUIPMENT CORPORATION
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215

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45 /RT88 V2 EXEC PARAMETERS - EDITED BY USER
46 /
47 /
48 0001 PDP8E=1
49 0000 PDP12=0
50 0001 EAE=1
51 0001 PWRFL=1
52 0030 MCMFLD=30
53 0023 NTASKS=23
54 0001 CHECKPT=1
55 0000 PARTNS=0
56 /
57 /((THE N PARTITIONS ARE NUMBERED FROM 0 TO N-1)
58 /
59 /COMMON TASK NUMBERS - EDITED BY USER
60 /IT IS ADVISABLE TO DEFINE ALL TASKS HERE, NAMES GIVEN BELOW
61 /ARE USED BY SOME SYSTEM TASKS AND SHOULD BE DELETED FROM THIS
62 /LIST IF THE CORRESPONDING TASK IS NOT INCLUDED IN THE SYSTEM
63 0001 CLOCK=1
64 0002 PWRFL=2
65 0003 TTY=3
66 0004 LPT=4
67 0005 MCR=5
68 0006 LTA=6
69 0007 DTA=7
70 0021 SWAPPER=21
71 0010 RK8=10
72 0011 RF08=11
73 0012 DF32=12
74 0013 CSA=13
75 0014 CSAF=14
76 0016 ICS=16
77 0017 RX8A=17
78 0023 OS8=NTASKS
79 0020 OS8F=20
80 /
81 /SOFTWARE PARAMETERS - EDITED BY USER
82 /
83 /
84 0002 OSFLDS=2
85 0030 OSKBDV=30
86 0031 OSTTDV=31
87 0010 OSSYSD=RK8
88 0004 OSFILL=4
89 /
90 /
91 0001 MCRSY3=1
92 /
93 /
94 0000 CLKTYP=0
95 0020 CLKQLN=20
96 /
97 0170 HERTZ=120
98 0074 SHERTZ=60
99 /

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0010 SYSRKS
0000 SUNIT=8

IFDEF SHAPPER 4

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/EQUIVALENCES:

7344 AC7776= CLL STA RAL
7346 AC7775= CLL STA RTL
7330 AC4000= CLA STL RAR
7350 AC3777= CLL STA RAR
7332 AC2000= CLA STL RTR
7326 AC0002= CLA STL RTL

/MONITOR CALL VALUES:

4020 CAL= JMS 20 /CALL THE EXECUTIVE
5424 POST08= JMP I 24 /DISMISS AN INTERRUPT
4425 WAITM= JMS I 25 /WAIT FOR MULTIPLE EVENTS

/NOTE: "*" MEANS CRITICAL VALUE MAY NOT
/BE CHANGED WITHOUT MODIFYING SYSTEM CODE!!

0000 SEND= 0 /SEND MESSAGE
0001 RECEIV= 1 /RECEIVE MESSAGE
0002 WAITE= 2 /WAIT FOR EVENT FLAG
0003 RUN= 3 /CONTINUE TASK EXECUTION
0004 SUSPND= 4 /SUSPEND TASK EXECUTION
0005 POST= 5 /POST AN EVENT FLAG
0006 SKPIN= 6 /INSERT CODE INTO INTERRUPT SKIP CHAIN
0007 DERRAIL= 7 /INITIATE END-ACTION
0010 BLKARG= 10 /BLOCK TASK FOR REASON SPECIFIED IN ARG
0011 SENDM= 11 /SEND MESSAGE AND WAIT
0012 UNBLARG= 12 /UNBLOCK TASK FOR REASON SPECIFIED IN ARG
4000 FREE= 4000 /**FREE PARTITION

IFDEF UDC 4A0=0/D0=1/D1=2/G1=3/EC=4/RC=5
OC=6/ECT=7/CS=10/ICT=11/AT=12

/TASK STATUS FLAGS:

4000 NONRWT= 4000 /**NONRESIDENT TASK WAIT
2000 EPWT= 2000 /EVENT FLAG WAIT
1000 RUNWT= 1000 /SCHEDULE WAIT
0400 SHPWT= 0400 /**SHAPPER WAIT
0200 EORMWT= 0200 /EVENT FLAG OR MESSAGE WAIT
0100 USERWT= 0100 /USER SPECIFIED WAIT
0040 ENABWT= 0040 /ENABLE WAIT
0020 MSGWT= 0020 /MESSAGE WAIT
0010 NETWT= 0010 /NETWORK WAIT (RESERVED FOR POSSIBLE FUTURE USE)
0001 DNENT= 0001 /**DOES NOT EXIST WAIT

218

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150 /SYSTEM LOCATIONS:
151
152 1176 MSGTBL= 1200-2 /TASK MESSAGE TABLE
153 1244 TSTABL= NTASKS*2+MSGTBL-4 /TASK STATE TABLE = HOLDS
154 /TASK LINK,UM,DP,IF,PC,AC,HQ
155 1367 TPTABL= NTASKS*2+TSTABL-1 /TASK PLAS TABLE = HOLDS
156 /TASK STATUS PLAS
157
158 1414 RESTBL= TPTABL+NTASKS*2 /RESIDENCY TABLE
159 1420 PARTBL= NTASKS*SWAPPER+RESTBL+387774 /PARTITION TABLE
160 0043 COMMAND=43 /SWAPPER COMMAND BUFFER
161
162
163 0035 TSWPLG= 35 /TASK SW INHIBIT FLAG IN FIELD 0
164 0036 TODL= 36 /LOW ORDER TIME OF DAY IN FIELD 0
165 0037 TODH= 37 /HIGH ORDER TIME OF DAY IN FIELD 0
166 0040 DATE= 40 /DATE IN OBS FORMAT IN FIELD 0
167 0041 MCREP= 41 /MCR START EVENT FLAG IN FIELD 0
168

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219

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169 /TASK TABLE SETUP = "TASK", "CUR", "ININT", AND "START"
170 /MUST BE DEFINED BY TASK:
171
172 1222 1222 *TASK*2+MSGTBL
173 01222 0000 ZBLOCK 2 /MESSAGE BUFFER INITIALLY CLEAR
174 1314 1314 *TASK*4+TSTABL
175 01314 0000 CUR*10+CUR /INITIAL PLAS
176 01315 4400 START
177 01316 0000 0 /INITIAL AC 0
178 1401 1401 *TASK*7+TPTABL
179 01401 0000 ININT

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220

```
180 /RF08/OF32 DRIVER FOR RT88 V2
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8/30/74

221

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224 /ACCEPTS STANDARD RT88 MASS STORAGE MESSAGE FORMAT
225
226 0012 IFDEF OF32 <TASK= OF32>
227 IFNDEF OF32 <TASK= RF08>
228
229 0000 INIWT= 0
230 0000 CUR= 0
231
232 6615 DIML= 6615
233 6616 DIMA= 6616
234 6621 DFSE= 6621
235 6622 OFSC= 6622
236 6623 DISK= 6623
237 6643 DWAL= 6643
238 6603 DMAR= 6603
239 6605 DMAW= 6605
240 6601 DCMA= 6601
241
242 7750 RFHC= 7750
243 7751 RFCA= 7751
244
245 0000 FIELD CURX10
246 4400
247 THP,
248 04400 4020 START, CAL
249 04401 0000 DONEFG, SKPINS
250 04402 4515 TRYCT, INTPT
251
252 04403 4020 LOOP, CAL
253 04404 0001 RECEIV /GET A MESSAGE
254 04405 0000 ADDR,
255 04406 3246 DCA FLD
256 04407 2201 ISZ DONEFG /INITIALIZE EVENT FLAG
257 04410 7240 STA
258 04411 1205 DOAGIN, TAO ADDR
259 04412 4002 IDP
260 04413 4252 JMS INIT /START UP THE OLI DISK
261 04414 1377 TAO (PSTINT
262 04415 3325 DCA IDISP /INITIALIZE INTERRUPT DISPATCH
263 04416 7346 AC7775
264 04417 6001 ION
265 04420 3202 DCA TRYCT /TRY 3 TIMES
266 04421 4020 CAL
267 04422 0002 WAITE
268 04423 4401 PDONFG, DONEFG /WAIT FOR COMPLETION
269 04424 1201 TAO
270 04425 7650 SNA CLA
271 04426 5231 JMP NOPFAL /EVENT FLAG 0 = NORMAL END
272 04427 1376 TAO (=4 /EVENT FLAG NOT 0 = POWER FAILURE MUST HAVE
273 04430 5211 JMP DOAGIN /OCCURRED WHILE WE WERE WAITING.
274 04431 4245 NOPFAL, JMS GET /THIS JUST SETS THE OF AND ADDR
275 04432 7600 P7600, 7600
276 04433 1243 TAO STATUS
277 04434 3605 DCA I ADDR
278 04435 1246 TAO FLD
```

222

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279 04436 3243 DCA PFLD
280 04437 1205 TAD ADDR
281 04440 1375 TAD (=7 /GET POINTER TO MESSAGE EVENT FLAG
282 04441 4020 CAL
283 04442 0005 POST
284
285 04443 7402 STATUS, PFLD, HLT
286 04444 5203 JMP LOOP /GET ANOTHER MESSAGE
287
288 04445 0000 GET, 0
289 04446 7402 FLD, HLT
290 04447 2205 ISZ ADDR
291 04450 1605 TAD I ADDR
292 04451 5645 JMP I GET

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223

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293 /RF08 STARTUP SUBROUTINE = CALLED WITH IOP
294 04452 0000 INIT, 0
295 04453 3205 DCA ADDR /ADDRESS OF PARAMETER BLOCK =1 IN AC
296 04454 6601 DCMA /CLEAR DISK
297 04455 4245 JMS GET
298 04456 7200 CLA /IGNORE UNIT
299 04457 4245 JMS GET
300 04460 0374 AND (70
301 04461 3200 DCA TMP /SAVE FIELD
302 04462 1605 TAD I ADDR
303 04463 7104 CLL RAL
304 04464 0232 AND P7600
305 04465 7440 BZA
306 04466 7041 CIA /FORM WORD COUNT FOR OPERATION
307 04467 6201 CDF 0
308 04470 3773 DCA I (RFWC /SAVE IN WC LOC
309 04471 7006 RTL
310 04472 1372 TAD (DMAR /GET READ OR WRITE INST
311 04473 3313 DCA INST
312 04474 7240 STA
313 04475 4245 JMS GET
314 04476 6201 CDF 0
315 04477 3771 DCA I (RFCA /STORE CURRENT ADDRESS LOC
316 04500 4245 JMS GET
317 IFNDEF DF32 <
318 CLL RTR
319 RTR
320 AND (377 /GET HIGH ORDER DISK ADDRESS
321 DXAL /INTO EXTENDED REGISTER
322 TAD (500 /ENABLE COMPLETION AND ERROR INTERRUPT
323 P
324 IFDEF DF32 <
325 04501 7106 CLL RTR
326 04502 0370 AND (3700 /GET HIGH ORDER DISK ADDRESS
327 P
328 04503 1200 TAD TMP /ADD IN FIELD
329 04504 6615 DIML /LOAD EXTENDED ADDRESS REG
330 04505 7200 CLA /FOR DF32
331 04506 1605 TAD I ADDR
332 04507 7112 CLL RTR
333 04510 7012 RTR
334 04511 7010 RAR
335 04512 0232 AND P7600 /ACTUALLY 7400 SINCE 200 BIT CLEAR!
336 04513 7402 INST, HLT /READY, STEADY, GO!
337 04514 5652 JMP I INIT

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224

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338 04515 0000 INTRPT, 010 /SKIP CHAINING GOES HERE
339 04516 0000
340
341 IFNDEF DF32 <DISK> /SKIP ON COMPLETION OR ERROR
342 04517 6622 IPDEF DF32
343 04520 6621 DFSC /SKIP ON COMPLETION
344 04521 7410 DFSE /SKIP ON NO ERROR
345 04522 5715 SKP /COMPLETION OR ERROR = SKIP AGAIN
346 04523 6203 JMP I INTRPT
347 04524 5725 CDF CIP CUR /SET OF AND IF CORRECTLY
348 04525 4542 JMP I ,+1
349 04526 6202 IDISP, HALT
350 04527 5424 CIP 0 /IDISP IS A COROUTINE WITH
351 04528 5424 POSTDS /THE RTS8 INTERRUPT SYSTEM
352
353 /RF00 INTERRUPT SERVICE
354
355 04530 6621 FSTINT, DFSE /ERROR?
356 04531 7410 IPDEF DF32 <SKP> /SKIP IS REVERSE-SENSE
357 04532 5336 JMP OKOVER /NO - WE'RE DONE
358 04533 2202 ISZ TRYCT /ITS A MORE SERIOUS ERROR - HOW MANY
359 04534 5343 JMP TRYAGN /TIMES HAVE WE HIT IT?
360 04535 6616 DIMA /TOO MANY - RETURN DISK STATUS REGISTER
361 04536 3243 OKOVER, DCA STATUS
362 04537 6601 DCMA /CLEAR NASTY FLAG
363 04540 1223 TAD POONFG /GOING TO POSTDS WITH THE AC NON-ZERO
364 04541 4325 JMS IOISP /WAKES UP THE HANDLER TO CLEAN UP
365 04542 7402 HALT, HLT /FOR GOOD LUCK
366
367 04543 1205 TRYAGN, TAD ADOR
368 04544 1376 TAD (=4 /BACK UP THE ADDRESS POINTER
369 04545 4252 JMS INIT
370 04546 4325 GOAWAY, JMS IDISP
371 04547 5330 JMP FSTINT
372 04570 3700
373 04571 7751
374 04572 6603
375 04573 7750
376 04574 0070
377 04575 7771
378 04576 7774
379 04577 4530
380 4600
381

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AC0002 7326 MCR 0005 TSWFLG 0035
AC2000 7332 MCRF 0041 TTY 0003
AC3777 7350 MCRSY8 0001 UNSARG 0012
AC4000 7330 MSGTBL 1176 USERMT 0100
AC7775 7346 MSGMT 0020 WAIT 0002
AC7776 7344 NETMT 0010 WAITM 4425
ADDR 4405 NONRMT 0000
BLKARG 0010 NOPFAL 4431
CAL 4020 NYASK8 0023
CHECKP 0001 OSFILL 0004
CLKGLN 0020 OSFLOS 0002
CLKTYP 0000 OSKBDV 0030
CLOCK 0001 OSSYSD 0010
COMMAN 0043 OSTTGV 0031
CSA 0013 OS 0023
CSAF 0014 OSOF 0020
CUR 0000 PARTBL 1420
DATE 0040 PARTNS 0000
DCMA 6601 POONFG 4423
DERAIL 0007 PDP12 0000
DFSC 6622 PDP8E 0001
DFSE 6621 PFLO 4443
DF32 0012 POST 0005
DIMA 6616 POSTDS 5424
DIMA 6615 PWRF 0002
DISK 6623 PWRFAL 0001
OKOVER 4536 P7600 4432
DMAR 6603 RECEIV 0001
DMAH 6605 RESTBL 1414
DNEWT 0001 RFCA 7751
DDAGIN 4411 RFWC 7750
DNEFG 4401 RF06 0011
DTA 0007 RK8 0010
DXAL 6643 RUN 0003
EAE 0001 RUNMT 1000
FFWT 2000 NY8A 0017
ENABWT 0040 SEND 0000
FORMMT 0200 SENDW 0011
FLO 4446 SHERTZ 0074
FREE 4700 SKPINS 0006
FSTINT 4530 START 4400
GET 4445 STATUS 4443
GOAWAY 4546 SUNIT 0000
HALT 4502 SUSPND 0004
HERTZ 0170 SWAPPE 0021
HGMFLD 0030 SWPWT 0000
ICS 0016 SYS 0010
IDISP 4525 TASK 0012
INIT 4452 TFTABL 1367
ININT 0000 TMP 4400
INST 4513 TDDH 0037
INTRPT 4515 TDDL 0036
LOOP 4403 TRYAGN 4543
LPT 0004 TRYCT 4402
TA 0004 TSTABL 1244

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226

MCREP	167#				
MCRSYS	91#				
MSGTBL	152#	153	172		
MSGWT	147#				
NETWT	148#				
NOPFAL	271	274#			
NTASKS	53#	78	153	155	158 159
OSFILL	88#				
OSFLOS	84#				
OSKBDV	85#				
OSSYSO	87#				
OSTTGV	86#				
OSB	78#	83			
OSBF	79#				
PARTBL	159#				
PARTNS	55#				
PDOFPG	268#	363			
PDP12	49#				
PDP8E	48#				
PFLD	279	285#			
POST	127#	283			
POSTDS	117#	351			
PWRF	64#				
PWRFAL	51#				
P7600	275#	304	335		
RECEIV	123#	253			
RESTD	158#	159			
RFCA	243#	315			
RFWC	242#	308			
RF88	72#	227			
RK8	71#	87	102		
RUN	125#				
RUNNT	142#				
RX8A	77#				
SEND	122#				
SENDW	131#				
SHERTZ	98#				
SKPINS	128#	249			
START	176	248#			
STATUS	276	284#	361		
SUNIT	103#				
SUSPND	126#				
SWAPPE	70#	181	157	159	
SWPWT	143#				
SYS	102#				
TASK	172	174	178	226	227#
TFTABL	155#	158	178		
TMP	247#	301	328		
TOOH	165#				
TOOL	164#				
TRYAGN	359	367#			
TRYCT	250#	265	358		
TSTABL	153#	155	174		
TSMFLG	163#				
TTY	65#				
UDC	135				
UNRARG	132#				
USERWT	145#				
WAITE	124#	267			
WAITH	118#				

229

04570	326				
04571	315				
04572	310				
04573	308				
04574	300				
04575	281				
04576	272	368			
04577	261				

V3

230

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1 /PARAMETERS FOR RTS-8 TASKS (VERSION 2)
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11 /COPYRIGHT (C) 1974,1975 BY DIGITAL EQUIPMENT CORPORATION
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231

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45
46 /RTS8 V2 EXEC PARAMETERS - EDITED BY USER
47
48 0001 PDP8E=1
49 0000 PDP12=0
50 0001 EAE=1
51 0001 PHRFAL=1
52 0030 HGHFLD=30
53 0023 NTASKS=23
54 0001 CHECKPT=1
55 0000 PARTNS=0
56
57 /THE N PARTITIONS ARE NUMBERED FROM 0 TO N-1)
58
59 /COMMON TASK NUMBERS - EDITED BY USER
60 /IT IS ADVISABLE TO DEFINE ALL TASKS HERE, NAMES GIVEN BELOW
61 /ARE USED BY SOME SYSTEM TASKS AND SHOULD BE DELETED FROM THIS
62 /LIST IF THE CORRESPONDING TASK IS NOT INCLUDED IN THE SYSTEM
63
64 0001 CLOCK=1
65 0002 PHRF=2
66 0003 TTY=3
67 0004 LPT=4
68 0005 MCR=5
69 0006 LTA=6
70 0007 DTA=7
71 0021 SWAPPER=21
72 0010 RK0=10
73 0011 RF00=11
74 0012 DF32=12
75 0013 CSA=13
76 0014 CSAF=14
77 0016 ICS=16
78 0017 RX0A=17
79 0023 OS0=NTASKS
80 0020 OS0F=20
81
82 /SOFTWARE PARAMETERS - EDITED BY USER
83
84 0002 OSFLDS=2
85 0030 OSKBDV=30
86 0031 OSTTGV=31
87 0010 OSSYSO=RK0
88 0004 OSFILL=4
89
90 IFDEF MCR <
91 0001 MCRSYS=1
92
93 IFDEF CLOCK <
94 0000 CLKTYP=0
95 0020 CLKQLN=20
96
97 0170 HERTZ=120
98 0074 SHERTZ=60
99
100 OCTAL

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232

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100
101
102      0010 SYS=RK8
103      0000 SUNIT=8
104

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233

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105      /EQUIVALENCES:
106
107      7344 AC7776= CLL STA RAL
108      7346 AC7775= CLL STA RTL
109      7330 AC4000= CLA STL RAR
110      7350 AC3777= CLL STA RAR
111      7332 AC2000= CLA STL RTR
112      7326 AC0002= CLA STL RTL
113
114      /MONITOR CALL VALUES:
115
116      4020 CAL= JMS 20 /CALL THE EXECUTIVE
117      5424 POSTDS= JMP I 24 /DISMISS AN INTERRUPT
118      4425 WAITM= JMS I 25 /WAIT FOR MULTIPLE EVENTS
119
120      /NOTE: "*" MEANS CRITICAL VALUE MAY NOT
121      /BE CHANGED WITHOUT MODIFYING SYSTEM CODE!!
122      0000 SEND= 0 /SEND MESSAGE
123      0001 RECEIV= 1 /RECEIVE MESSAGE
124      0002 WAITE= 2 /WAIT FOR EVENT FLAG
125      0003 RUN= 3 /CONTINUE TASK EXECUTION
126      0004 SUSPND= 4 /SUSPEND TASK EXECUTION
127      0005 POST= 5 /POST AN EVENT FLAG
128      0006 SKPINS= 6 /INSERT CODE INTO INTERRUPT SKIP CHAIN
129      0007 DERAILE= 7 /INITIATE END-ACTION
130      0010 BLKARG= 10 /BLOCK TASK FOR REASON SPECIFIED IN ARG
131      0011 SENDM= 11 /SEND MESSAGE AND WAIT
132      0012 UNBARG= 12 /UNBLOCK TASK FOR REASON SPECIFIED IN ARG
133      4000 FREE= 4000 /**FREE PARTITION
134
135      IFDEF UDC <AO=0;DO=1;DI=2;GC=3;EC=4;RC=5
136      DC=6;ECT=7;CS=10;DCT=11;AI=12>
137
138      /TASK STATUS FLAGS:
139
140      4000 NONRWT= 4000 /**NONRESIDENT TASK WAIT
141      2000 EPWT= 2000 /EVENT FLAG WAIT
142      1000 RUNWT= 1000 /SCHEDULE WAIT
143      0400 SWPWT= 0400 /**SWAPPER WAIT
144      0200 EDRWT= 0200 /EVENT FLAG OR MESSAGE WAIT
145      0100 USERWT= 0100 /USER SPECIFIED WAIT
146      0040 ENABWT= 0040 /ENABLE WAIT
147      0020 MSGWT= 0020 /MESSAGE WAIT
148      0010 NETWT= 0010 /NETWORK WAIT (RESERVED FOR POSSIBLE FUTURE USE)
149      0001 DNEWT= 0001 /**DOES NOT EXIST WAIT

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234

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150      /SYSTEM LOCATIONS:
151
152      1176 MSGTBL= 1200=2      /TASK MESSAGE TABLE
153      1244 TSTABL= NTASKS*2+MSGTBL=4      /TASK STATE TABLE = HOLDS
154      /TASK L2K,UM,DP,IF,PC,AC,MQ
155      1367 TPTABL= NTASKS*2+TSTABL=1      /TASK FLAGS TABLE = HOLDS
156      /TASK STATUS FLAGS
157
158      1414 REGTBL= TPTABL+NTASKS*2      /RESIDENCY TABLE
159      1420 PARTBL= NTASKS+SWAPPER*2+REGTBL+367774      /PARTITION TABLE
160      0043 COMMAND=43      /SWAPPER COMMAND BUFFER
161
162
163      0035 TSWFLG= 35      /TASK SW INHIBIT FLAG      IN FIELD 0
164      0036 TODL= 36      /LOW ORDER TIME OF DAY      IN FIELD 0
165      0037 TODH= 37      /HIGH ORDER TIME OF DAY      IN FIELD 0
166      0040 DATE= 40      /DATE IN DSS FORMAT      IN FIELD 0
167      0041 MCREP= 41      /MCR START EVENT FLAG      IN FIELD 0
168

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235

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169      /TASK TABLE SETUP = "TASK", "CUR", "ININT" AND "START"
170      /MUST BE DEFINED BY TASK:
171
172      1216      *TASK*2+MSGTBL
173      01216 0000 ZBLOCK 2      /MESSAGE BUFFER INITIALLY CLEAR
174      1304      *TASK*4+TSTABL
175      01304 0000 CURXIB*CUR      /INITIAL FLAGS
176      01305 4200 START
177      01306 0000 0      /INITIAL AC 0
178      *TASK*TFTABL
179      01377 0000 ININT

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236

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180 /RKS DRIVER FOR RT80 V2
181 /
182 /
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189 /
190 /COPYRIGHT (C) 1974,1975 BY DIGITAL EQUIPMENT CORPORATION
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213 /DIGITAL.
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237

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224 /ACCEPTS STANDARD MASS-STORAGE MESSAGE POINT
225 /
226 0010 TASK= RKS
227 0000 INIW= 0
228 0000 CUR= 0
229 /
230 6732 DLOC= 6732
231 6755 DLCA= 6755
232 6753 DLWC= 6753
233 6733 DLOR= 6733
234 6745 DSKD= 6745
235 6747 DSKE= 6747
236 6742 DCL8= 6742
237 6741 DROS= 6741
238 6734 DROA= 6734
239 6751 DCLA= 6751
240 /
241 0000 FIELD CURX10
242 4200 *4200
243 /
244 04200 4020 TMP, CAL
245 04201 0006 DONEFG, SKPINS
246 04202 4310 TRYCT, INTRPT
247 /
248 04203 4020 LOOP, CAL
249 04204 0001 RECEIV /GET A MESSAGE
250 04205 0000 ADDR, 0
251 04206 3246 OCA FLD
252 04207 2201 182 DONEFG /INITIALIZE EVENT FLAG
253 04210 7240 STA
254 04211 1205 DOAGIN, TAD ADDR
255 04212 6002 IDO
256 04213 4252 JMS INIT /START UP THE OLE DISK
257 04214 1377 TAD (P8INT)
258 04215 3316 OCA IDISP /INITIALIZE INTERRUPT DISPATCH
259 04216 7346 AC7775
260 04217 6001 ION
261 04220 3202 OCA TRYCT /TRY 3 TIMES
262 04221 4020 CAL
263 04222 0002 WAITE
264 04223 4201 PDONFG, DONEFG /WAIT FOR COMPLETION
265 04224 1201 TAD
266 04225 7650 SNA CLA
267 04226 5231 JMP NOPFAL /IF EVENT FLAG STILL NON=ZERO, WE
268 04227 1376 TAD (=4 /MUST HAVE HAD A POWER FAILURE
269 04230 5211 JMP DOAGIN
270 04231 4245 NOPFAL, JMS GET /THIS JUST SETS THE DF AND ADDR
271 04232 7600 P7600, 7600
272 04233 1243 TAD STATUS
273 04234 3605 OCA I ADDR
274 04235 1246 TAD FLD
275 04236 3243 OCA PFLD
276 04237 1205 TAD ADDR
277 04240 1375 TAD (=7 /GET POINTER TO MESSAGE EVENT FLAG
278 04241 4020 CAL
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279 04242 0005      POST
280                STATUS,
281 04243 7402      PFLD, HLT
282 04244 5203      JMP     LOOP    /GET ANOTHER MESSAGE
283
284 04245 0000      GET,      0
285 04246 7402      PFLD,      HLT
286 04247 2205      ISZ      ADDR
287 04250 1605      TAD I     ADDR
288 04251 5645      JMP I     GET

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289                /RK8 STARTUP SUBROUTINE - CALLED WITH I/F
290 04252 0000      INIT,      0
291 04253 3205      DCA      ADDR    /ADDRESS OF PARAMETER BLOCK =1 IN AC
292 04254 6742      DCLB      /CLEAR DISK STATUS
293 04255 4245      JMS      GET
294 04256 7104      CLL RAL    /GET 2=UNIT NUMBER
295 04257 0374      AND      (7
296 04260 3200      DCA      TMP
297 04261 2205      ISZ      ADDR    /GET OS/S STYLE I/O CONTROL WORD
298 04262 1605      TAD I     ADDR
299 04263 0373      AND      (70   /EXTRACT FIELD
300 04264 1200      TAD      TMP
301 04265 1372      TAD      (6000  /ENABLE DONE INTERRUPT ONLY
302 04266 6732      DLDC      /LOAD RK8 COMMAND REGISTER
303 04267 1605      TAB I     ADDR  /RE-FETCH CONTROL WORD
304 04270 7004      RAL
305 04271 0232      AND      P7600
306 04272 7440      SZA      /PRESERVE LINK
307 04273 7041      CIA      /AROUND NEGATE
308 04274 6753      BLWC      /LOAD RK8 WORD COUNT
309 04275 7006      RTL
310 04276 1371      TAD      (BLDR /FORM READ OR WRITE DP
311 04277 3306      DCA      INST
312 04300 7240      STA
313 04301 2205      ISZ      ADDR    /GET START ADDR =1
314 04302 1605      TAD I     ADDR
315 04303 6755      DLCA      /TO RK8 HARDWARE CA REGISTER
316 04304 2205      ISZ      ADDR    /GET BLOCK NUMBER
317 04305 1605      TAD I     ADDR
318 04306 7402      INST,     HLT    /READY, STEADY, GO!
319 04307 5652      JMP I     INIT
320
321 04310 0000      INTRPT, 010    /SKIP CHAINING GJES HERE
322 04311 0000
323 04312 6745      DSKD
324 04313 5710      JMP I     INTRPT
325 04314 6203      CDF CIF CUR    /SET OF AND IF CORRECTLY
326 04315 5716      JMP I     .+1
327 04316 4350      IDISP,     IGNORE /IGNORE INITIAL INTERRUPT
328 04317 6202      CIF 0      /IDISP IS A CORD/TIME WITH
329 04320 5624      POSTOS      /THE RT3=0 INTERRUPT SYSTEM

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330 /RKB INTERRUPT SERVICE
331
332 04321 6741 TRYAGN, DRDS
333 04322 0370 AND (40
334 04323 6742 DCL8
335 04324 7650 SNA CLA /CHECK FOR TRACK SEEK ERROR
336 04325 5332 JMP NOTKSK /IF WE GOT ONE
337 04326 6751 DCLA /WE HAVE TO RECALIBRATE THE DISK
338 04327 1372 TAD (6000
339 04330 6732 DLDC /RE-ENABLE INTERRUPT ON COMPLETION
340 04331 4316 JMS IDISP /AND WAIT UNTIL COMPLETION
341 04332 1205 NOTKSK, TAD ADDR
342 04333 1376 TAD (=4 /BACK UP THE ADDRESS POINTER
343 04334 4292 JMS INIT
344 04335 4316 GOAWAY, JMS IDISP
345
346 04336 6747 FSTINT, DSKE /ERROR?
347 04337 5347 JMP RKDVER /N/ = WE'RE DONE
348 04340 6741 DRDS
349 04341 0367 AND (4
350 04342 7600 SZA CLA /CHECK FOR TRACK OVERFLOW
351 04343 5354 JMP TRKOV /WHICH DOESN'T COUNT AS AN ERROR
352 04344 2202 IOZ TRYCT /BUT AS A HARDWARE DEFICIENCY
353 04345 5321 JMP TRYAGN /ITS A MORE SERIOUS ERROR = HOW MANY
354 04346 6741 DRDS /TIMES HAVE WE HIT IT?
355 04347 3243 RKOVER, DCA STATUS /TOD MANY = RETURN DISK STATUS REGISTER
356 04350 6742 IGNORE, DCL8
357 04351 1223 TAD PDDNF /CLEAR NASTY FLAGS
358 04352 4316 JMS IDISP /GOING TO POSTDS WITH THE AC NON-ZERO
359 04353 7402 HALT, HLT /WAKES UP THE HANDLER TO CLEAN UP
360 /FOR GOOD LUCK
361 04354 1306 TRKOV, TAD INST
362 04355 3362 DCA OV'NST /COPY READ OR WRITE INST (CLUMBY)
363 04356 6742 DCL8 /WIPE SLATE CLEAN
364 04357 6734 DRDA /WE MUST BUMP THE DISK ADDRESS
365 04360 0366 AND (7760 /TO THE NEXT TRACK
366 04361 1365 TAD :20 /BY HAND
367 04362 7402 OVINST, HLT
368 04363 5335 JMP GOAWAY /DD REMAINDER OF OPERATION
369 04365 0020
370 04366 7760
371 04367 0004
372 04370 0040
373 04371 6733
374 04372 6000
375 04373 0070
376 04374 0007
377 04375 7771
378 04376 7774
379 04377 4336
380 4400
381

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PAGE 9

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AC0002 7326 LTA 0006 TRYAGN 4321
AC2000 7332 MCR 0005 TRYCT 4202
AC3777 7350 MCREP 0041 TSTABL 1244
AC4000 7330 MCRSYS 0001 TSHFLG 0035
AC7775 7346 MSGTBL 1176 TTY 0003
AC7776 7344 MSGMT 0020 UNSARG 0012
ADDR 4205 NETWT 0010 USERWT 0100
BLKARG 0010 NONRWT 4000 WAITE 0002
CAL 4020 NOPPAL 4231 WAITH 4425
CHECKP 0001 NOTKSK 4332
CLKOLN 0020 NTASKS 0023
CLKTYP 0000 OSFILL 0004
CLOCK 0001 OSFLDS 0002
COMMAN 0043 OSKBDV 0030
CSA 0013 OSBYSD 0010
CSAF 0014 OSTTDV 0031
CUR 0000 OS 0023
DATE 0040 OSF 0020
DCLA 6751 OVINST 4362
DCL8 6742 PARTBL 1420
DERAIL 0007 PARTNS 0000
OF32 0012 PDDNFG 4223
OLCA 6755 PDP12 0000
DLDC 6732 PDP8E 0001
DLDR 6733 PFLD 4243
DLWC 6753 POST 0005
DNEW 0001 POSTDS 5424
DOAGIN 4211 PWRP 0002
DNEFG 4201 PWRPAL 0001
DRDA 6734 P7600 4232
DRDS 6741 RECEIV 0001
DSK 6745 RESTBL 1414
DSKE 6747 RFOB 0011
DTA 0007 RKDVER 4347
EAE 0001 RKB 0010
EFT 2000 RUN 0003
ENARWT 0040 RUNWT 1000
EDRMWT 0000 RXBA 0017
FLO 4246 SEND 0000
FREE 4000 SENDW 0011
FSTINT 4336 SHERTZ 0074
GET 4245 SKPINS 0006
GOAWAY 4335 START 4200
HALT 4353 STATUS 4243
HERTZ 0170 SUNIT 0000
HGHFLD 0030 SUSPND 0004
ICS 0016 SWAPPE 0021
IDISP 4316 SWPWT 0400
IGNORE 4350 SYS 0010
INIT 4252 TASK 0010
INIWT 0000 TFTABL 1367
INST 4306 TMP 4200
INTRPT 4310 TODM 0037
LOOP 4203 TODL 0036
LPT 0004 TRKOV 4354

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242

LTA	688				
MCR	678	98			
MCREP	1678				
MCRSY8	918				
MSGTBL	1528	153	172		
MSGWT	1478				
NETWT	1488				
NOPFAL	267	2788			
NOTKSK	336	3418			
NTASK8	338	78	153	155	158 159
OSFILL	888				
OSFLOS	848				
OSKDOV	838				
OSSY80	878				
OSTTOV	868				
OS8	788	83			
OS8P	798				
OVIN8T	362	3678			
PARTBL	1598				
PARTNS	358				
POONFG	2648	357			
POP12	498				
POP8E	488				
PFLD	275	2818			
POST	1278	279			
POSTOS	1178	329			
PWRP	648				
PWRPAL	518				
P7688	2718	385			
RECEIV	1238	249			
RESTBL	1588	159			
RF88	728				
RKOVER	347	3558			
RK8	718	87	182	226	
RUN	1258				
RUNWT	1428				
RX8A	778				
SEND	1228				
SENOH	1318				
SHERTZ	988				
SKPINS	1288	245			
START	176	2448			
STATUS	272	2888	355		
SUNIT	1838				
SUSPND	1268				
SWAPPE	788	181	157	159	
SWPWT	1438				
SYS	1828				
TASK	172	174	178	2268	
TFTABL	1558	158	178		
TMP	2438	296	388		
TODH	1658				
TOOL	1648				
TRKOV	351	3618			
TRYAGN	3328	353			
TRYCT	2468	261	352		
TSTABL	1538	155	174		
TSHFLG	1638				
TTY	658				
UDC	135				

245

UNBARG	1328				
USERWT	1458				
WAITE	1248	263			
WAITH	1188				
04365	366				
04366	365				
04367	349				
04370	333				
04371	318				
04372	381	338			
04373	299				
04374	295				
04375	277				
04376	268	342			
04377	257				

V3

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247

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45 /RTS8 V2 EXEC PARAMETERS - EDITED BY USER
46 /
47 /
48 0001 POP8E=1
49 0000 POP12=0
50 0001 EAE=1
51 0001 PHRFAL=1
52 0030 HGMFLO=30
53 0023 NTASKS=23
54 0001 CHECKPT=1
55 0000 PARTNS=0
56 /
57 /
58 /
59 /COMMON TASK NUMBERS - EDITED BY USER
60 /IT IS ADVISABLE TO DEFINE ALL TASKS HERE, NAMES GIVEN BELOW
61 /ARE USED BY SOME SYSTEM TASKS AND SHOULD BE DELETED FROM THIS
62 /LIST IF THE CORRESPONDING TASK IS NOT INCLUDED IN THE SYSTEM
63 0001 CLOCK=1
64 0002 PHRF=2
65 0003 TTY=3
66 0004 LPT=4
67 0005 MCR=5
68 0006 LTA=6
69 0007 OTA=7
70 0021 SWAPPER=21
71 0010 RKS=10
72 0011 RF8=11
73 0012 DF32=12
74 0013 CSA=13
75 0014 CSAF=14
76 0016 ICS=16
77 0017 RX8A=17
78 0023 OS8=NTASKS
79 0020 OS8F=20
80 /
81 /SOFTWARE PARAMETERS - EDITED BY USER
82 /
83 /
84 0002 OSFLO3=2
85 0030 OSK8DV=30
86 0031 OSTYDV=31
87 0010 OSSYS8=RKS
88 0004 OSFILL=4
89 /
90 /
91 0001 MCRSYS=1
92 /
93 /
94 0000 CLKTP=0
95 0020 CLKQLN=20
96 /
97 0170 HERTZ=120
98 0074 SHERTZ=60
99 /

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248

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100
101
102
103
104
0010 SYSWRK8
0000 SUNIT8
>
> IPDEF SWAPPER <
>

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249

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149
/EQUIVALENCES:
7344 AC7776= CLL STA RAL
7346 AC7775= CLL STA RTL
7330 AC0000= CLA STL RAR
7350 AC3777= CLL STA RAR
7332 AC2000= CLA STL RTR
7326 AC0002= CLA STL RTL
/MONITOR CALL VALUES:
4020 CAL= JMS 20 /CALL THE EXECUTIVE.
5424 POSTDS= JMP I 24 /DISMISS AN INTERRUPT
4425 WAITM= JMS I 25 /WAIT FOR MULTIPLE EVENTS
/NOTE: "*" MEANS CRITICAL VALUE MAY NOT
/BE CHANGED WITHOUT MODIFYING SYSTEM CODE!!
0000 SEND= 0 /SEND MESSAGE
0001 RECEIV= 1 /RECEIVE MESSAGE
0002 WAITE= 2 /WAIT FOR EVENT FLAG
0003 RUN= 3 /CONTINUE TASK EXECUTION
0004 SUSPND= 4 /SUSPEND TASK EXECUTION
0005 POST= 5 /POST AN EVENT FLAG
0006 SKPINS= 6 /INSERT CODE INTO INTERRUPT SKIP CHAIN
0007 DERAILE= 7 /INITIATE END-ACTION
0010 RLKARG= 10 /BLOCK TASK FOR REASON SPECIFIED IN ARG
0011 SENDM= 11 /SEND MESSAGE AND WAIT
0012 UNBARG= 12 /UNBLOCK TASK FOR REASON SPECIFIED IN ARG
4000 FREE= 4000 /**FREE PARTITION
IFDEF UDC 4AO=0/D0=1/DI=2/GC=3/EC=4/RC=5
DC=6/ECT=7/CB=10/DCT=11/AI=12
/TASK STATUS FLAGS:
4000 NONRWT= 4000 /**NONRESIDENT TASK WAIT
2000 EPWT= 2000 /EVENT FLAG WAIT
1000 RUNWT= 1000 /SCHEDULE WAIT
0400 SWPWT= 0400 /**SWAPPER WAIT
0200 EORMWT= 0200 /EVENT FLAG OR MESSAGE WAIT
0100 USERWT= 0100 /USER SPECIFIED WAIT
0040 ENABWT= 0040 /ENABLE WAIT
0020 MSGWT= 0020 /MESSAGE WAIT
0010 NETWT= 0010 /NETWORK WAIT (RESERVED FOR POSSIBLE FUTURE USE)
0001 DNEWT= 0001 /**DOES NOT EXIST WAIT

```

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150 /SYSTEM LOCATIONS:
151
152 1176 MSGTBL= 1200+2 /TASK MESSAGE TABLE
153 1244 TSTABL= NTASKS+2*2+MSGTBL+4 /TASK STATE TABLE = HOLDS
154 /TASK LINK,UM,OF,IF,PC,AC,MQ
155 1367 TPTABL= NTASKS+2*4+TSTABL+1 /TASK FLAGS TABLE = HOLDS
156 /TASK STATUS FLAGS
157
158 1414 RESTBL= TPTABL+NTASKS+2 /RESIDENCY TABLE
159 1420 PARTBL= NTASKS+SWAPPER*2+RESTBL+327774 /PARTITION TABLE
160 0043 COMMAND=43 /SWAPPER COMMAND BUFFER
161
162
163 0035 TSWFLG= 35 /TASK SW INHIBIT FLAG IN FIELD 0
164 0036 TODL= 36 /LOW ORDER TIME OF DAY IN FIELD 0
165 0037 TODH= 37 /HIGH ORDER TIME OF DAY IN FIELD 0
166 0040 OATE= 40 /DATE IN OSS FORMAT IN FIELD 0
167 0041 MCREP= 41 /MCR START EVENT FLAG IN FIELD 0
168

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251

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169 /TASK TABLE SETUP = "TASK", "CUR", "ININ", AND "START"
170 /MUST BE DEFINED BY TASK:
171
172 1216 *TASK*2+MSGTBL
173 01216 0000 ZBLOCK 2 /MESSAGE BUFFER INITIALLY CLEAR
174 1304 *TASK*4+TSTABL
175 01304 0000 CURX10+CUR /INITIAL FLAGS
176 01305 4200 START
177 01306 0000 0 /INITIAL AC 0
178 1377 *TASK+TPTABL
179 01377 0000 ININT

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252

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253

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224
225 0010 TASK= RK8
226 0000 ININT= 0
227 0000 CUR= 0
228
229 6741 DSKP= 6741
230 6742 DCLR= 6742
231 6743 DLAG= 6743
232 6744 DLCA= 6744
233 6745 DRST= 6745
234 6746 DLOC= 6746
235
236 0000 FIELD CURX10
237 4200 *4200
238
239 04200 4020 THP,
240 04201 0006 START, CAL
241 04202 4000 DDNEFG, SKPINS
242 TRYCT, INTRPT
243
244 04203 4020 LDDP, CAL
245 04204 0001 RECEIV
246 04205 0000 ADDR, 0 /GET A MESSAGE
247 04206 3307 DCA FLD
248 04207 7346 AC7775
249 04210 3202 OCA TRYCT /TRY 3 TIMES
250 04211 2201 ISZ DDNEFG /INITIALIZE EVENT FLAG
251 04212 7160 CMA STL /** AC MAY BE 3 HERE **
252 04213 1205 TAD ADDR
253 04214 3205 DCA ADDR /ADDRESS OF PARAMETER BLOCK -1 IN AC
254 04215 4306 JMS GET
255 04216 1377 TAD (=4 /PROPAGATE BIT 16 INTO THE LINK
256 04217 0376 AND (3 /CLEAR ALL HIGH-ORDER BITS
257 04221 3313 DCA PAGCNT /ROTATE BIT 10 INTO LOW-ORDER BIT
258 04222 4306 JMS GET /STORE TRANSFORMED UNIT
259 04223 0375 AND (7770 /GET FUNCTION WORD,
260 04224 1313 TAD PAGCNT /COMBINE WITH UNIT NUMBER
261 04225 3313 DCA PAGCNT /AND STORE IT AWAY
262 04226 4306 JMS GET
263 04227 6744 DLCA /PUT STARTING TRANSFER ADDRESS IN HARDWARE
264 04230 7301 CLA CLL IAC
265 04231 0313 AND PAGCNT
266 04232 7640 SZA CLA /"UNIT" = DISK*2+HALF = CHECK WHICH HALF
267 04233 1374 TAD (6260 /SECOND HALF = ADD BLOCK NUMBER OFFSET
268 04234 4306 JMS GET /TO BLOCK NUMBER
269 04235 3306 DCA REC /SAVE LOW ORDER
270 04236 1313 TAD PAGCNT
271 04237 0373 AND (4076 /GET UNIT BITS, FIELD BITS AND READ/WRITE BIT
272 04240 7430 SZL
273 04241 7001 IAC /ADD HIGH ORDER BLOCK NUMBER
274 04242 1372 TAD (400 /ADD INTERRUPT ENABLE BIT
275 04243 3314 DCA CR /STORE AS SKELETON COMMAND REGISTER
276 04244 1313 TAD PAGCNT
277 04245 0371 AND (3700 /ISOLATE PAGE COUNT FIELD
278 04246 7450 SNA

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254

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279 04247 7330 AC4000 /ALLOW FULL FIELD TRANSFERS
280 04250 3313 DCA PAGCNT
281 04251 1313 TAD PAGCNT
282 04252 0347 AND RK7600 /IF ENTIRE TRANSFER IS ONE PAGE,
283 04253 7650 SNA CLA
284 04254 1370 TAD (100 /SET "ONE-PAGE TRANSFER" BIT IN COMMAND REG
285 04255 6002 IOF /INTERRUPTS OFF WHILE LOADING REGISTERS
286 04256 4331 JMS RKSETP /START TRANSFER AND SET UP NEXT ONE
287 04257 1367 TAD (FSTINT
288 04260 6201 CDF CUR
289 04261 6001 ION /** NOTE THE "DCA IDISP" MUST BE THE NEXT INSTR
290 04262 3766 DCA I (IDISP /INITIALIZE INTERRUPT DISPATCH
291 04263 4020 CAL
292 04264 0002 WAITE
293 04265 4201 POONFG, DONEFG /WAIT FOR COMPLETION
294 04266 1376 TAD (3 /LOAD CONSTANT FOR BACKING UP ADDR
295 04267 2305 ISZ RTRYFG /DID EVENT FLAG SIGNIFY ERROR OR COMPLETION?
296 04270 5211 JMP INIT /ERROR OR PWR FAI. = RETRY ENTIRE OPERATION
297 04271 4306 JMS GET /THIS JUST SETS THE DP AND ADDR
298 04272 7600 P7600, 7600
299 04273 1303 TAD STATUS
300 04274 3605 DCA I ADDR
301 04275 1307 TAD PLO
302 04276 3303 DCA PFLD
303 04277 1205 TAD ADDR
304 04300 1365 TAD (=7 /GET POINTER TO MESSAGE EVENT FLAG
305 04301 4020 CAL
306 04302 0005 POST
307 STATUS,
308 04303 7402 PFLD, HLT
309 04304 5203 JMP LOOP /GET ANOTHER MESSAGE
310
311 04305 0000 RTRYFG, 0 /RETRY FLAG
312
313 REC, /LOW-ORDER BLOCK NUMBER
314 04306 0000 GET, 0
315 04307 7402 FLD, HLT
316 04310 2205 ISZ ADDR
317 04311 1605 TAD I ADDR
318 04312 5706 JMP I GET
319
320 04313 0000 PAGCNT, 0 /PAGE COUNT FOR TRANSFER
321 04314 0000 CR, 0 /SKELETON COMMAND REGISTER CONTENTS
322 04315 0000 NEWCR, 0

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323 /RK8 INTERRUPT SERVICE
324
325 04316 6745 FSTINT, DRST /READ STATUS REGISTER
326 04317 7104 CLL RAL /4000 MEANS NO ERRORS, 0 IS "IMPOSSIBLE" HERE
327 04320 7640 SZA CLA /ERROR?
328 04321 5764 JMP I (RKERR /ERROR ROUTINE IN NEXT PAGE
329 04322 1313 RKNEXT, TAD PAGCNT
330 04323 7750 SPA SNA CLA /CHECK FOR LAST TRANSFER
331 04324 5765 JMP I (RKOVER
332 04325 1315 TAD NEWCR /GET PRECOMPUTED COMMAND REGISTER CHANGES
333 04326 4331 JMS RKSETP /START NEXT TRANSFER AND SET UP THE ONE AFTER THAT
334 04327 6202 CIF 0
335 04330 5424 POSTDS /EXIT INTERRUPT ROUTINE - IDISP STILL EQUALS "FSTINT"
336
337 04331 0000 RKSETP, 0 /ROUTINE TO START UP A TRANSFER
338 04332 1314 TAD CR /AND PRECOMPUTE THE NEXT ONE,
339 04333 6746 DLOC /LOAD THE RK8E COMMAND REGISTER
340 04334 1306 TAD REC
341 04335 6743 DLAG
342 04336 1313 TAD PAGCNT /LOAD BLOCK NUMBER AND GO
343 04337 1347 TAD RK7600
344 04340 3313 DCA PAGCNT /WE PRECOMPUTE THE NEXT TRANSFER BECAUSE THE
345 04341 2306 ISZ REC /RK8E HAS A VERY NARROW WINDOW IN WHICH
346 04342 7410 SKP /TO INITIATE THAT TRANSFER ONCE THE FLAG POPS UP,
347 04343 2314 ISZ CR /HIGH-ORDER BLOCK NUMBER IN COMMAND REGISTER
348 04344 1306 TAD REC
349 04345 0362 AND (37 /IF WE ARE NOT GOING TO A NEW TRACK,
350 04346 7161 CIA STL /WE DON'T HAVE TO CHECK HEADERS NEXT OPERATION.
351 04347 7600 RK7600, 7600
352 04350 1313 TAD PAGCNT /IF NEXT TRANSFER IS HALF BLOCK,
353 04351 0347 AND RK7600 /WE MUST SET THE HALF-BLOCK COMMAND BIT.
354 04352 7650 SNA CLA
355 04353 1361 TAD (1000
356 04354 7012 RTR /LINK HAS "DON'T CHECK HEADER" BIT
357 04355 7010 RAR
358 04356 3315 DCA NEWCR /STORE SPECIAL COMMAND REGISTER BITS FOR NEXT TIME,
359 04357 5731 JMP I RKSETP
360 04361 1000
361 04362 0037
362 04363 4041
363 04364 4036
364 04365 7771
365 04366 4006
366 04367 4316
367 04370 0100
368 04371 3700
369 04372 0400
370 04373 4074
371 04374 6260
372 04375 7770
373 04376 0003
374 04377 7774
375 PAGE

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376 /INTERRUPT SKIP CHAIN ENTRY
377
378 00400 0000 INTRPT, 010 /SKIP CHAINING GOES HERE
379 00401 0000
380 00402 6741 DSKP
381 00403 5600 JMP I INTRPT
382 00404 6203 CDF CIF CUR /SET DF AND IF CORRECTLY
383 00405 5606 JMP I ,*1
384 00406 4445 IDISP, IGNORE /IGNORE INITIAL INTERRUPTS
385 00407 6202 CIF 0 /IDISP IS A COROUTINE WITH
386 00410 5424 POSTOS /THE RTS-8 INTERRUPT SYSTEM
387
388 00411 0377 TRYAGN, AND (001 /CHECK TO SEE IF WE
389 00412 7650 SNA CLA /HAVE TO RECALIBRATE
390 00413 5231 JMP NRECAL /NO
391 00414 6742 DCLR /CLEAR DISK STATUS
392 00415 7326 AC0002 /MYSTIC SEQUENCE OF INSTRUCTIONS WHICH
393 00416 6742 DCLR /RECALIBRATES A DRIVE
394 00417 4206 JMS IDISP /RECALIBRATE GENERATES A DONE FLAG ALMOST IMMEDIATELY,
395 00420 1776 TAD I (CR /AND A SEEK DONE SIGNAL WHEN IT IS FINISHED
396 00421 0375 AND (0 /THEREFORE WE MUST ENABLE THE SEEK DONE SIGNAL
397 00422 1374 TAD (000 /TO SET THE DONE FLAG AND CAUSE AN INTERRUPT,
398 00423 6746 DLDC /NO SOONER SAID THAN DONE)
399 00424 4206 JMS IDISP /WAIT FOR THE FINAL FLAG
400 00425 6745 DRST
401 00426 7104 CLL RAL /IF THE RECALIBRATE GENERATED AN ERROR,
402 00427 7640 SZA CLA
403 00430 5236 JMP RKERR /BOY ARE YOU IN TROUBLE!
404 00431 6742 NRECAL, DCLR /CLEAR STATUS REGISTER
405 00432 3773 SETEF, OCA I (RTRYFG /SET FLAG TO 0 OR -1
406 00433 1372 TAD (00NEFG
407 00434 4206 JMS IDISP /DISMISS AND POST EVENT FLAG
408 00435 7402 HALT, HLT /CANNOT GET HERE!
409
410 00436 6745 RKERR, DRST /READ STATUS REGISTER
411 00437 2771 ISZ I (TRYCT /HOW MANY TIMES HAVE WE BEEN THROUGH HERE?
412 00440 5211 JMP TRYAGN /ROOM FOR ONE MORE,
413 00441 3770 RKOVER, OCA I (STATUS /SET STATUS TO 0 OR STATUS REGISTER
414 00442 6742 DCLR /CLEAR NASTY FLAGS (IF ANY)
415 00443 7240 STA /INDICATE FINAL RETURN
416 00444 5232 JMP SETEF /AND ACTIVATE TASK
417
418 00445 6742 IGNORE, DCLR
419 00446 5424 POSTOS /CLEAR FLAG AND DISMISS
420 00470 4303
421 00471 4202
422 00472 4201
423 00473 4305
424 00474 0600
425 00475 0006
426 00476 4314
427 00477 0401
428 4600
429

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PAGE
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AC0002 7326 NETWT 0010 TRYAGN 4411
AC2000 7332 NEWCR 4315 TRYCT 4202
AC3777 7350 NONRWT 4000 TSTABL 1244
AC4000 7330 NRECAL 4431 TSWFLG 0035
AC7775 7346 NTASKS 0023 TTY 0003
AC7776 7344 OSFILL 0004 UNBARG 0012
ADDR 4205 OSFLOS 0002 USERWT 0100
BLKARG 0010 OSKDDV 0030 WAITE 0002
CAL 4020 OSSYSD 0010 WAITM 4425
CHECKP 0001 OSTTOV 0031
CLKQLN 0020 OS0 0023
CLKTYP 0000 OS0F 0020
CLOCK 0001 PAGCNT 4313
COMMAN 0043 PARTBL 1420
CR 4314 PARTNS 0000
CSA 0013 PDONFG 4265
CSAF 0014 PDP12 0000
CUR 0000 PDP8E 0001
DATE 0040 PFLO 4303
DCLR 6742 POST 0005
DEMAIL 0007 POSTDS 5424
DP32 0012 PWRP 0002
DLAG 6743 PWRFAL 0001
DLCA 6744 P7600 4272
DLDC 6746 REC 4306
DNEWT 0001 RECEIV 0001
DONEFG 4201 RESTBL 1414
DRST 6745 RF08 0011
DSKP 6741 RKERR 4436
DTA 0007 RKNEXT 4322
EAE 0001 RKOVER 4441
FFMT 2000 RKSETP 4331
ENABWT 0040 RK7600 4347
EDRMWT 0200 RK0 0010
FLD 4307 RTRYFG 4305
FREE 4000 RUN 0003
FSTINT 4316 RUNWT 1000
GET 4306 RX0A 0017
HALT 4435 SEND 0000
HERTZ 0170 SENOW 0011
HGHFLD 0030 SETEF 4432
ICS 0016 SHERTZ 0074
IDISP 4406 SKPIN0 0006
IGNORE 4445 START 4204
INIT 4211 STATUS 4303
INIWT 0000 SUNIT 0000
INTRPT 4400 SUSPND 0004
LOOP 4203 SWAPPE 0021
LPT 0004 SWPWT 0400
LTA 0006 SYS 0010
MCR 0005 TASK 0010
MCREP 0041 TFTABL 1347
MCRSYS 0001 TMP 4200
MSGTBL 1176 TOOM 0037
MSGWT 0020 TOOL 0036

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ERRORS DETECTED: 0
LINKS GENERATED: 0

259

AC0002	112#	392					
AC2000	111#						
AC3777	110#						
AC4000	109#	279					
AC7775	108#	247					
AC7776	107#						
ADDR	245#	251	252	300	303	316	317
AO	135#						
BLKARG	130#						
CAL	116#	239	243	291	305		
CHECKP	54#						
CLKQLN	95#						
CLKTYP	94#						
CLOCK	63#	93					
COMMAN	160#						
CR	275	321#	330	347	395		
CS	130#						
CSA	74#						
CSAF	75#						
CT	136#						
CUR	175	175	227#	236	280	302	
DATE	166#						
DCLR	230#	391	393	404	414	410	
DERAIL	129#						
DF32	73#						
DLAG	231#	341					
DLCA	232#	263					
DLDC	234#	339	390				
DNEWT	149#						
DONEFG	240#	249	293	406			
DRST	233#	325	400	410			
DSKP	229#	300					
DTA	69#						
EAE	50#						
EPWT	141#						
ENABWT	146#						
EORHWT	144#						
FLO	246	301	315#				
FREE	133#						
FSTINT	207	325#					
GET	253	250	262	260	297	314#	310
HALT	400#						
HERTZ	97#						
HGMFLO	52#						
ICS	76#						
IDISP	290	304#	394	399	407		
IGNORE	304	410#					
INIT	249#	296					
INIWT	179	226#					
INTRPT	241	370#	381				
LOOP	243#	309					
LPT	66#						
LTA	60#						
MCR	67#	90					
MCREP	167#						
MCRSYS	91#						
MSGTBL	152#	153	172				
MSGWT	147#						
NETWT	140#						

260

NEWCR	322#	332	350						
NRECAL	390	404#							
NTASKS	53#	70	153	155	150	159			
OSFILL	88#								
OSFLOS	84#								
OSKBOV	85#								
OSYSXD	87#								
OSTTOV	86#								
OS0	70#	83							
OS0F	79#								
PAGCNT	257	260	261	265	270	276	280	281	280# 329
	342	344	352						
PARTBL	159#								
PARTNS	55#								
PDONPG	293#								
PDP12	49#								
PDP0E	40#								
PFLD	302	300#							
POST	127#	306							
POSTD3	117#	335	386	419					
PWRF	64#								
PWRFAL	51#								
P7600	290#								
REC	269	313#	340	345	340				
RECEIV	123#	244							
RESTD	150#	159							
RFB0	72#								
RKERR	320	403	410#						
RKNEXT	329#								
RKOVER	331	413#							
RKSETP	206	333	337#	359					
RK7600	202	343	351#	353					
RK0	71#	87	102	225					
RTRYFG	295	311#	405						
RUN	125#								
RUNMT	142#								
RX0A	77#								
SEND	122#								
SENDW	131#								
SETEP	405#	416							
SHERTZ	90#								
SKPINS	120#	240							
START	176	239#							
STATUS	299	307#	413						
SUNIT	103#								
SUSPND	126#								
SWAPPE	70#	101	157	159					
SWPWT	143#								
SVS	102#								
TASK	172	174	170	225#					
TFTABL	155#	150	170						
THP	230#								
TODH	165#								
TODL	164#								
TRYAGN	300#	412							
TRYCT	241#	240	411						
T8TABL	153#	155	174						
TSWFLG	163#								
TTY	65#								
UDC	135								

261

UNBARG	132#	
USERWT	145#	
WAITE	124#	292
WAITH	110#	
.04361	355	
.04362	349	
.04363	331	
.04364	320	
.04365	304	
.04366	290	
.04367	287	
.04370	284	
.04371	277	
.04372	274	
.04373	271	
.04374	267	
.04375	259	
.04376	255	294
.04377	254	
.04570	413	
.04571	411	
.04572	406	
.04573	405	
.04574	397	
.04575	396	
.04576	395	
.04577	388	

V3

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263

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45 /RTS8 V2 EXEC PARAMETERS - EDITED BY USER
46
47
48 0001 POPBE=1
49 0000 PDP12=0
50 0001 EAE=1
51 0001 PWRFL=1
52 0030 HGMFLO=30
53 0023 NTASKS=23
54 0001 CHECKPT=1
55 0000 PARTNS=0
56 /((THE N PARTITIONS ARE NUMBERED FROM 0 TO N-1))
57
58 /COMMON TASK NUMBERS - EDITED BY USER
59 /IT IS ADVISABLE TO DEFINE ALL TASKS HERE. NAMES GIVEN BELOW
60 /ARE USED BY SOME SYSTEM TASKS AND SHOULD BE DELETED FROM THIS
61 /LIST IF THE CORRESPONDING TASK IS NOT INCLUDED IN THE SYSTEM
62
63 0001 CLOCK=1
64 0002 PWR=2
65 0003 TTY=3
66 0004 LPT=4
67 0005 MCR=5
68 0006 LTA=6
69 0007 OTA=7
70 0021 SWAPPER=21
71 0010 RK8=10
72 0011 RF08=11
73 0012 OF32=12
74 0013 CSA=13
75 0014 CSAF=14
76 0016 ICS=16
77 0017 RX8A=17
78 0023 OS8=NTASKS
79 0020 OS8F=20
80
81 /SOFTWARE PARAMETERS - EDITED BY USER
82
83 IFDEF OS8 <
84 0002 OSFLOS=2
85 0030 OSKBOV=30
86 0031 OSTTOV=31
87 0010 OSSY80=RK8
88 0004 OSFILL=4
89
90 IFDEF MCR <
91 0001 MCRSYS=1
92
93 IFDEF CLOCK <
94 0000 CLKTP=0
95 0020 CLKQLN=20
96
97 0170 HERTZ=120
98 0074 SHERTZ=60
99 OCTAL

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264

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100      >
101      IFDEF SWAPPER <
102      0010 SY8=RK8
103      0000 SUNIT=0
104      >

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265

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105      /EQUIVALENCES:
106
107      7344 AC7776= CLL STA RAL
108      7346 AC7775= CLL STA RTL
109      7330 AC4000= CLA STL RAR
110      7350 AC3777= CLL STA RAR
111      7332 AC2000= CLA STL RTR
112      7326 AC0002= CLA STL RTL
113
114      /MONITOR CALL VALUES:
115
116      4020 CAL= JMS 20 /CALL THE EXECUTIVE
117      5424 POSTDS= JMP I 24 /DISMISS AN INTERRUPT
118      4425 WAITH= JMS I 25 /WAIT FOR MULTIPLE EVENTS
119
120      /NOTE: "*" MEANS CRITICAL VALUE MAY NOT
121      /BE CHANGED WITHOUT MODIFYING SYSTEM CODE!!
122      0000 SEND= 0 /SEND MESSAGE
123      0001 RECEIV= 1 /RECEIVE MESSAGE
124      0002 WAITE= 2 /WAIT FOR EVENT FLAG
125      0003 RUN= 3 /CONTINUE TASK EXECUTION
126      0004 SUSPND= 4 /SUSPEND TASK EXECUTION
127      0005 POST= 5 /POST AN EVENT FLAG
128      0006 SKPINS= 6 /INSERT CODE INTO INTERRUPT SKIP CHAIN
129      0007 DERAII= 7 /INITIATE END=ACTION
130      0010 BLKARG= 10 /BLOCK TASK FOR REASON SPECIFIED IN ARG
131      0011 SENDW= 11 /SEND MESSAGE AND WAIT
132      0012 UNBARG= 12 /UNBLOCK TASK FOR REASON SPECIFIED IN ARG
133      4000 FREE= 4000 /**FREE PARTITION
134
135      IFDEF UDC <AO=0;DO=1;OI=2;GC=3;EC=4;RC=5
136      DC=6;ECT=7;CS=10;DCT=11;AI=12>
137
138      /TASK STATUS FLAGS:
139
140      4000 NONRMT= 4000 /**NONRESIDENT TASK WAIT
141      2000 EFMT= 2000 /EVENT FLAG WAIT
142      1000 RUNMT= 1000 /SCHEDULE WAIT
143      0400 SWPMT= 0400 /**SWAPPER WAIT
144      0200 EORHMT= 0200 /EVENT FLAG OR MESSAGE WAIT
145      0100 USERMT= 0100 /USER SPECIFIED WAIT
146      0040 ENABMT= 0040 /ENABLE WAIT
147      0020 MSGMT= 0020 /MESSAGE WAIT
148      0010 NETMT= 0010 /NETWORK WAIT (RESERVED FOR POSSIBLE FUTURE USE)
149      0001 DNEMT= 0001 /**DOES NOT EXIST WAIT

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150      /SYSTEM LOCATIONS:
151
152      1176 MSGTBL= 1200=2      /TASK MESSAGE TABLE
153      1244 TSTABL= NTASKS+2*2+MSGTBL=4      /TASK STATE TABLE = HOLDS
154      /TASK LINK, UN, DF, IF, PC, AC, MQ
155      1367 TFTABL= NTASKS+2*4+TSTABL=1      /TASK FLAG TABLE = HOLDS
156      /TASK STATUS FLAG
157
158      1414 RESTBL= TFTABL+NTASKS+2      /RESIDENCY TABLE
159      1420 PARTBL= NTASKS+SWAPPER*2+RESTBL+3&7774      /PARTITION TABLE
160      0043 COMMAND=43      /SWAPPER COMMAND BUFFER
161      >
162
163      0035 TSHPLG= 35      /TASK SW INHIBIT FLAG IN FIELD 0
164      0036 TODL= 36      /LOW ORDER TIME OF DAY IN FIELD 0
165      0037 TODH= 37      /HIGH ORDER TIME OF DAY IN FIELD 0
166      0040 DATE= 40      /DATE IN OS8 FORMAT IN FIELD 0
167      0041 MCREP= 41      /MCR START EVENT FLAG IN FIELD 0
168

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169      /TASK TABLE SETUP = "TASK", "CUR", "ININT", AND "START"
170      /MUST BE DEFINED BY TASK:
171
172      1224      *TASK*2+MSGTBL
173      01224 0000 ZBLOCK 2      /MESSAGE BUFFER INITIALLY CLEAR
174      1320      *TASK*4+TSTABL
175      01320 0011 CURX10+CUR      /INITIAL FLAG
176      01321 4200 START
177      01322 0000 0      /INITIAL AC 0
178      1402      *TASK*TFTABL
179      01402 0000 ININT

```

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```

180 /CASSETTE HANDLER FOR RT88 V2
181 /
182 /
183 /
184 /
185 /
186 /
187 /
188 /
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```

224 6700 KCLR=6700 /CLEAR ALL
225 /CLEAR STATUS A AND B REGISTERS
226 6701 KSDR=6701 /SKIP ON DATA FLAG
227 6702 KSEN=6702 /SKIP ON ERROR
228 6703 KSBF=6703 /SKIP ON READY FLAG
229 6704 KLSA=6704 /LOAD STATUS A FROM AC 4=11
230 /CLEAR AC, THEN
231 /LOAD 8 BIT COMPLEMENT OF STATUS A
232 /BACK INTO AC
233 6705 KSAF=6705 /SKIP ON ANY FLAG OR ERROR
234 6706 KGOA=6706 /ASSERT THE CONTENTS OF STATUS A,
235 /TRANSFER DATA IF READ OR WRITE
236 6707 KRSD=6707 /READ STATUS B INTO AC 4=11
237 0001 INT=1
238
239 0000 ININT=0
240 0013 TASK=C8A
241 0010 CUR=10
242 0001 FIELD CURX10
243
244 /FORMAT OF MESSAGE ISI
245 /
246 /MSG, ZBLOCK 3
247 /WORD 1 = UNIT
248 /   BITS 9=11 = UNIT
249 /   BIT 0 = 0 = UTILITIES CALL
250 /   BIT 0 = 1 = HANDLER CALL
251 /WORD 2 = FUNCTION
252 /   FOR HANDLER BIT 0 = 1 = WRITE, 0 = READ
253 /   BITS 6=8 = FIELD OF BUFFER
254 /   BIT 11 = 1 = DO NOT STORE DATA (ON READ ONLY)
255 /   FOR UTILITY UTIL WORD
256 /   10 = REWIND
257 /   30 = BACKSPACE FILE GAP
258 /   40 = WRITE FILE GAP
259 /   50 = BACKSPACE BLOCK GAP
260 /   70 = SKIP TO FILE GAP
261 /WORD 3
262 /   FOR UTILITY = STATUS RETURN
263 /   FOR HANDLER = BUFFER ADDRESS
264 /WORD 4
265 /   FOR HANDLER = RECORD SIZE
266 /   FOR UTIL UNUSED
267 /WORD 5
268 /   FOR HANDLER = STATUS RETURN
269 /   FOR UTIL UNUSED
270
271 /STATUS B BITS:
272 / 4=CRC/BLK ERROR
273 / 5=TIMING
274 / 6=EOF/BOT
275 / 7=EOF
276 / 8=DRIVE EMPTY
277 / 9=RW
278 / 10=WRITE LOCK OUT

```

270

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```

280      3600      *3600
281 13600 0000  FIXDVC, 0
282 13601 7010      RAR      /MOVE UNIT TO LINK; DEVICE TO AC
283 13602 0377      AND      (3  /MASK OFF DEVICE CODE
284 13603 3230      DCA      DVC  /SAVE DEVICE CODE
285 13604 7430      SZL
286 13605 1376      TAD      (100
287 13606 3272      DCA      ABUNIT /SET UNIT IN BIT 5
288 13607 1230      TAD      DVC
289 13610 7106      CLL  RTL
290 13611 7004      RAL
291 13612 3230      DCA      DVC  /MOVE TO BITS 6-1
292 13613 1375      TAD      (IOTBL
293 13614 3231      OCA      IOTPTR
294 13615 1631      IOTLOOP, TAD I  IOTPTR
295 13616 7450      SNA      /END OF TABLE?
296 13617 5232      JMP      CHECKR /YES
297 13620 3227      DCA      TMP
298 13621 1627      TAD I  TMP
299 13622 0374      AND      (7707 /MASK OUT OLD DVC
300 13623 1230      TAD      DVC  /INSERT NEW ONE
301 13624 3627      OCA I  TMP  /REPLACE
302 13625 2231      ISZ      IOTPTR /POINT TO NEXT ONE
303 13626 5215      JMP      IOTLOOP
304
305 13627 0000  TMP, 0
306 13630 0000  DVC, 0      /DEVICE CODE
307 13631 0000  IOTPTR, 0

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308 13632 4773 CHECKR, JMS I (CLEAR
309 13633 1372 TAD (200
310 13634 4265 JMS LOADA /SELECT DRIVE
311 13635 4771 JMS I (CHECKB
312 13636 0370 AND (7735 /IGNORE EOT/BOT FLAG + WLO
313 13637 1367 TAD (=1
314 13640 7640 SZA CLA
315 13641 5766 JMP I (SELERR /NOT READY
316 13642 5600 JMP I FIXDVC
317
318
319 13643 4765 READX, JMS I (CHK
320 13644 0262 AND L374
321 13645 7440 SZA
322 13646 5305 JMP ERRX
323 13647 6706 IOT6C, KGOA /GET CHAR JUST READ
324 13650 3342 DCA BYTE
325 13651 2340 ISZ BKNT
326 13652 7410 SKP
327 13653 5273 JMP RWCRC
328 13654 1342 TAD BYTE
329 13655 7402 BFLD, HLT
330 13656 3741 DMPFLG, DCA I BPTR /ZEROED IF BIT 1101 ON READ
331 13657 7200 CLA
332 13660 2341 ISZ BPTR
333 13661 6211 CDF CUR
334 13662 0374 L374, 374
335 13663 4764 JMS I (DISP
336 13664 5243 JMP READX
337

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338 13665 0000 LOADA, 0
339 13666 1272 TAD ABUNIT
340 13667 6704 IOT4, KLSA
341 13670 7200 CLA
342 13671 5665 JMP I LOADA
343
344 13672 0000 ABUNIT, 0
345
346 13673 1363 RWCRC, TAD (260+INT /ENABLE, ENABLE INTER, READ CRC
347 13674 4265 JMS LOADA
348 13675 4762 JMS I (GO
349 13676 4764 JMS I (DISP
350 13677 4765 JMS I (CHK
351 13700 4762 CRCHN, JMS I (GO
352 13701 4764 JMS I (DISP
353 13702 4771 JMS I (CHECKB
354 13703 0361 AND (7775 /IGNORE WLO
355 13704 1367 TAD (=1
356 13705 7650 ERRX, SNA CLA /ERRORS?
357 13706 5312 JMP ERRR+1 /NO - CLEAN BILL OF HEALTH
358 13707 2760 E3, ISZ I (ERRKNT /TRY 3 TIMES
359 13710 5757 JMP I (ERRCOV /RETRY
360 13711 7240 ERRR, STA /ERROR WHILE READING CRC
361 13712 4773 JMS I (CLEAR
362 13713 5756 JMP I (FINAL

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363 13714 5243 WRITEX, JMP READX
364 13715 4765 WRITEL, JMS I (CHK
365 13716 7112 CLL RTR
366 13717 7430 BZL
367 13720 5311 JMP ERRR /WLO ON WRITE OF NOT WORTH RETRYING
368 13721 7640 SZA CLA
369 13722 5307 JMP E3
370 13723 2340 ISZ BKNT
371 13724 7410 SKP
372 13725 5335 JMP WCRC
373 13726 7402 BFIELD, HLT
374 13727 2341 ISZ BPTR
375 13730 0070 Y0
376 13731 1741 TAD I BPTR
377 13732 4762 JMS I (00
378 13733 4764 JMS I (DISP
379 13734 5315 JMP WRITEL
380
381
382 13735 1363 WCRC, TAD (260+INT
383 13736 4265 JMS LOADA
384 13737 5300 JMP CRCHN
385 13740 0000 BKNT, B /NUMBER OF CHARS EXPECTED
386 13741 0000 BPTR, B /NEXT LOCATION III BUFFER TO STORE INTO
387 13742 0000 BYTE, B /TEMPORARILY HOLDS BYTE FOUND
388 13756 4103
389 13757 4117
390 13760 4323
391 13761 7775
392 13762 4062
393 13763 0261
394 13764 4106
395 13765 4066
396 13766 4326
397 13767 7777
398 13770 7735
399 13771 4051
400 13772 0200
401 13773 4056
402 13774 7707
403 13775 4000
404 13776 0100
405 13777 0003
406 4000

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407 14000 4060 IOTBL, IOT0
408 14001 4071 IOT1
409 14002 3667 IOT4
410 14003 4113 IOT5
411 14004 4063 IOT6
412 14005 3647 IOT6C
413 14006 4052 IOT7
414 14007 4117 ERRCOV
415 14010 0000 B
416
417 14011 7010 UTIL, RAR
418 14012 3777 OCA I (UNIT
419 14013 3250 OCA REWSW
420 14014 4776 JMS I (GET /FUNCTION WORD
421 14015 1375 TAO (=10
422 14016 7450 SNA
423 14017 2250 ISZ REWSW
424 14020 1374 TAO (210+INT
425 14021 3247 OCA TEMPFN
426 14022 1777 TAO I (UNIT
427 14023 6002 IOF
428 14024 4773 JMS I (FIXOVC /FIX DEVICE CODE
429 14025 1372 TAO (UT
430 14026 3306 OCA IDISP /SET RETURN ADDRESS
431 14027 1247 TAO TEMPFN
432 14030 4771 JMS I (LOADA
433 14031 4262 JMS GO /INITIATE UTIL
434 14032 5770 JMP I (COMON
435 14033 4251 UT, JMS CHECKB /LOOK AT STATUS B
436 14034 0367 AND (50 /CHECK FOR CL, EMPTY, OR WLO
437 /GIVE NO ERROR ON WLO *****
438 /BAO FOR WRGAP
439 14035 7450 SNA
440 14036 5245 JMP OK /NO ERRORS
441 14037 1366 TAO (=40
442 14040 7640 SZA CLA
443 14041 5244 JMP NOTOK /ERROR NOT CL
444 14042 1250 TAD REWSW
445 14043 7650 SNA CLA /CL OK IF DID REWIND
446 14044 7240 NOTOK, STA
447 14045 4256 OK, JMS CLEAR
448 14046 5303 JMP FINAL
449
450 14047 0000 TEMPFN, 0
451 14050 0000 REWSW, 0

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/1 MEANS OPERATION IS REWIND

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452 14051 0000 CHECKB, 0
453 14052 6707 IOT7, KR5B /READ STATUS B INTO AC 4=11
454 14053 3301 DCA BSTATE /SAVE STATUS B
455 14054 1301 TAD BSTATE
456 14055 5651 JMP I CHECKB
457
458 14056 0000 CLEAR, 0
459 14057 3302 DCA ERRIND /-1 MEANS ERROR
460 14060 6700 IOT8, KCLR /CLEAR STATUS A AND B
461 14061 5656 JMP I CLEAR
462
463 14062 0000 GO, 0
464 14063 6706 IOT6, KGOA /ASSERT CONTENTS OF STATUS A
465 14064 7200 CLA
466 14065 5662 JMP I GO
467
468 14066 0000 CHK, 0
469 14067 4251 JMS CHECKB
470 14070 0365 AND (376
471 14071 6701 IOT1, KSDR
472 14072 7410 SKP /DATA FLAG NOT UP =
473 14073 5666 JMP I CHK
474 14074 1364 TAD (=20
475 14075 7650 CLA /IS IT END OF FILE?
476 14076 5763 JMP I (ERRR /YES, ERROR = BUT DON'T RETRY
477 14077 1301 TAD BSTATE
478 14100 5666 JMP I CHK
479
480 14101 0000 BSTATE, 0 /STATUS OF REGISTER B
481 14102 0000 ERRIND, 0

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482 14103 1362 FINAL, TAD (DONEFG
483 14104 4306 JMS IDISP /FINAL PDS SETS E/ENT FLAG
484 14105 7402 HLT /DEBUG ONLY, SHOU.D NEVER GET HERE
485
486 14106 7402 IDISP, HLT
487 14107 6202 CIF 0
488 14110 5424 POSTDS
489
490 14111 0000 CASINT, ZBLOCK 2
491 14113 6705 IOTS, KSAF
492 14114 5711 JMP I CASINT
493 14115 6213 CDF CIF CUR
494 14116 5706 JMP I IDISP
495
496 14117 6700 ERRCOV, KCLR
497 14120 1361 TAD (250*INT
498 14121 4771 JMS I (LOADA
499 14122 4262 JMS GO /BACKSPACE BLOCK
500 14123 4760 JMS I (IDISP /WAIT
501 14124 4251 JMS CHECKB
502 14125 0357 AND (374 /KILL WRITE=LOCK I:IT
503 14126 7640 SZA CLA
504 14127 5763 JMP I (ERRR
505 14130 4756 JMS I (SETUP /RE=SET UP OPERATION
506 14131 5307 JMP IDISP+1 /FAKE A JMS
507 14136 4330
508 14157 0374
509 14160 4106
510 14161 0251
511 14162 4201
512 14163 3711
513 14164 7760
514 14165 0376
515 14166 7740
516 14167 0050
517 14170 4260
518 14171 3665
519 14172 4033
520 14173 3600
521 14174 0211
522 14175 7770
523 14176 4302
524 14177 4317
525

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526 / *DRG3
527
528 14200 4020 START, CAL
529 14201 0006 DONEFG, SKPINS
530 14202 4111 CASINT
531 14203 4020 LOOP, CAL
532 14204 0001 RECEIV
533 14205 0000 ADDR, 0
534 14206 3310 DCA FLD
535 14207 3322 DCA RW
536 14210 1316 TAD DCASET
537 14211 3777 DCA I (DMPFLG
538 14212 7346 AC7775
539 14213 1205 TAD ADDR
540 14214 3320 DCA MEVFLG
541 14215 2201 ISZ DONEFG
542 14216 4302 JMS GET
543 14217 2205 ISZ ADDR
544 14220 7104 CLL RAL
545 14221 7420 SNL
546 14222 5776 JMP I (UTIL
547 14223 7010 RAR
548 14224 3317 DCA UNIT
549 14225 4302 JMS GET
550 14226 0324 AND P70 /ISOLATE FIELD OF BUFFER
551 14227 1375 TAD (CDF
552 14230 3347 DCA WCDF
553 14231 4302 JMS GET /RETRIEVE FUNCTION CONTROL WORD
554 14232 7004 RAL /READ/WRITE BIT TO LINK
555 14233 7420 SNL
556 14234 5312 JMP READ11 /A READ OP
557 14235 7204 CLA RAL
558 14236 3322 RANDW, DCA RW /RW=1 IF WRITE
559 14237 2205 ISZ ADDR
560 14240 4302 JMS GET
561 14241 3321 DCA BUFFER /SAVE IT
562 14242 2205 ISZ ADDR
563 14243 4302 JMS GET
564 14244 6211 CDF CUR
565 14245 3325 DCA BSIZE /RECORD SIZE
566 14246 1317 TAD UNIT
567 14247 6002 IDP
568 14250 4774 JMS I (FIXOVC
569 14251 1347 TAD WCDF
570 14252 3773 DCA I (BFIELD
571 14253 1347 TAD WCDF
572 14254 3772 DCA I (BFLD
573 14255 7346 STA CLL /TAD (=3
574 14256 3323 DCA ERKNT
575 14257 4330 JMS SETUP /SET UP READ OR WRITE
576 14260 6001 COMDN, IDN
577 14261 7000 NOP
578 14262 4020 CAL
579 14263 0002 WAITE
580 14264 4201 DONEFG

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581 14265 2205 RTNSTS, ISZ ADDR
582 14266 1771 TAD I (ERRIND
583 14267 0770 AND I (BSTATE
584 14270 4307 JMS CDFMSG
585 14271 3605 DCA I ADDR
586 14272 6211 CDF CUR
587 14273 1310 TAD FLD
588 14274 3300 DCA PFLD
589 14275 1320 TAD MEVFLG
590 14276 4020 CAL
591 14277 0005 PDST
592 14300 0000 PFLD, 0
593 14301 5203 JMP LOOP
594
595 14302 0000 GET, 0
596 14303 4307 JMS CDFMSG
597 14304 1605 TAD I ADDR
598 14305 6211 CDF CUR
599 14306 5702 JMP I GET
600
601 14307 0000 CDFMSG, 0
602 14310 0000 FLD, 0
603 14311 5707 JMP I CDFMSG
604
605 14312 7012 READ11, RTR /BIT 11 TO LINK
606 14313 7630 SZL CLA
607 14314 3777 DCA I (DMPFLG /DON'T STORE DATA
608 14315 5236 JMP RANDW
609 14316 3741 DCASET, BPTR&177+3600 /DCA I BPTR
610
611 14317 0000 UNIT, 0
612 14320 0000 MEVFLG, 0
613 14321 0000 BUFFER, 0
614 14322 0000 RW, 0 /1 IF WRITE
615 14323 7775 ERKNT, =3
616 14324 0070 P70, 70
617 14325 0200 BSIZE, 200
618
619 14326 7240 SELERR, STA
620 14327 5265 JMP RTNSTS /RETURN ERROR

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621 14330 0000 SETUP, 0
622 14331 1322 TAD RW
623 14332 1367 TAD (WRITEX
624 14333 3766 DCA I (IDISP /SET RETURN ADDRESS
625 14334 1321 TAD BUFFER
626 14335 3765 DCA I (BPTR
627 14336 1325 TAD BSIZE
628 14337 7040 CMA /WANT TO READ ONE MORE
629 14340 1322 TAD RW
630 14341 3764 DCA I (BKNT
631 14342 1322 TAD RW
632 14343 7106 CLL RTL
633 14344 7006 RTL /WRITE FN CODE=0
634 14345 1363 TAD (200+INT /SELECT AND INTERRUPT ENABLE
635 14346 4762 JMS I (LOADA
636 14347 7402 WCOF, HLT
637 14350 1322 TAD RW
638 14351 7640 SZA CLA
639 14352 1721 TAD I BUFFER /*BPTR (FOR 2 LEVELS OF INDIRECT)
640 14353 6211 COF CUR
641 14354 4741 JMS I (GO
642 14355 5730 JMP I SETUP
643
644 14361 4062
645 14362 3665
646 14363 0201
647 14364 3740
648 14365 3741
649 14366 4106
650 14367 3714
651 14370 4101
652 14371 4102
653 14372 3655
654 14373 3726
655 14374 3600
656 14375 6201
657 14376 4011
658 14377 3656
659

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ABUNIT 3672 FLD 4310 PFLD 4300
AC0002 7326 FREE 4000 POST 0005
AC2000 7332 GET 4302 POSTDS 5424
AC3777 7350 GO 4062 PWRP 0002
AC4000 7330 HENTZ 0170 PWRFAL 0001
AC7775 7346 HGMFLD 0030 P70 4324
AC7776 7344 ICS 0016 RANDW 4236
ADDR 4205 IDISP 4106 READX 3643
BFIELD 3726 INIWT 0000 READ11 4312
BFLD 3655 INT 0001 RECEIV 0001
BKNT 3740 IOTBL 4000 RESTBL 1414
BLKARG 0010 IOTL00 3615 REWSW 4050
BPTR 3741 IOTPTR 3631 RF00 0011
BSIZE 4325 INT0 4060 RKS 0010
BSTATE 4101 INT1 4071 RTNSTS 4265
BUFFER 4321 INT4 3667 RUN 0003
BYTE 3742 INT5 4113 RUNWT 1000
CAL 4020 INT6 4063 RW 4322
CASINT 4111 INT6C 3647 RWCRC 3673
COFMSG 4307 INT7 4052 RX0A 0017
CHECK0 4051 KCLR 6700 SELERR 4326
CHECKP 0001 KGOA 6706 SEND 0000
CHECKR 3632 KLSA 6704 SENDW 0011
CHK 4066 KRSB 6707 SETUP 4330
CLEAR 4056 KSAF 6705 SMERTZ 0074
CLKOLN 0020 KSBF 6703 SKPINS 0006
CLKTYP 0000 KSDR 6701 START 4200
CLOCK 0001 KSEN 6702 SUNIT 0000
COMDN 4260 LOADA 3665 SUSPND 0004
COMMAN 0043 LOOP 4203 SWAPPE 0021
CRCHN 3700 LPT 0004 SWPWT 0400
CSA 0013 LTA 0006 SYS 0010
CSAF 0014 L374 3662 TASK 0013
CUR 0010 MCR 0005 TEMPFN 4047
DATE 0040 MCREP 0041 TFTABL 1367
DCASET 4316 MCRSYS 0001 THP 3627
DERAIL 0007 MEVFLG 4320 TODM 0037
DF32 0012 MSGTBL 1176 TOOL 0036
DMPFLG 3656 MSGWT 0020 TSTABL 1244
DNEWT 0001 NETWT 0010 TSWFLG 0035
DNEFG 4201 NONRWT 4000 TTY 0003
DTA 0007 NOTOK 4044 UNBARG 0012
DVC 3630 NTASKS 0023 UNIT 4317
EAE 0001 OK 4045 USERWT 0100
EFMT 2000 OSFILL 0004 UT 4033
ENABWT 0040 OSFLDS 0002 UTIL 4011
EORHWT 0200 OSKBDV 0030 WAITE 0002
ERKNT 4323 OSYSVD 0010 WAITH 4425
ERRCOV 4117 OSTYDV 0031 WCOF 4347
ERRIND 4102 OS0 0023 WCRC 3735
ERRR 3711 OS0F 0020 WRITEL 3715
ERRX 3705 PARTBL 1420 WRITEX 3714
E3 3707 PARTNS 0000
FINAL 4103 POP12 0000
FTXOVC 3600 POP0E 0001

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ERRORS DETECTED: 0
LINKS GENERATED: 0

263

ABUNIT	207	339	344#						
AC0002	112#								
AC2000	111#								
AC3777	110#								
AC4000	109#								
AC7775	108#	530							
AC7776	107#								
ADDR	533#	539	543	559	562	581	585	597	
AD	135#								
0FIELD	373#	570							
0FLO	329#	572							
0KNT	325	370	385#	630					
0LKARG	130#								
0PTR	330	332	374	376	386#	609	626		
0SIZE	565	617#	627						
0STATE	454	455	477	480#	583				
0UFFER	561	613#	625	639					
0YTE	324	328	387#						
CAL	116#	528	531	578	590				
CASINT	490#	492	530						
CDPM5G	584	596	601#	603					
CHECKB	311	353	435	452#	456	469	581		
CHECKP	54#								
CHECKR	296	308#							
CMK	319	350	364	468#	473	478			
CLEAR	308	361	447	458#	461				
CLKQLN	95#								
CLKTYP	94#								
CLOCK	63#	93							
COMMON	434	576#							
COMMAN	160#								
CRCHN	351#	384							
CS	138#								
CSA	74#	240							
CSAF	75#								
CT	136#								
CUR	175	175	241#	242	333	493	564	586	598
DATE	166#								
DCASET	536	609#							
DERAIL	129#								
DF32	73#								
DMPFLG	330#	537	607						
DNEWI	149#								
DONEFG	482	529#	541	580					
OTA	69#								
DVC	284	280	291	300	306#				
EAE	50#								
EFWT	141#								
ENADWT	146#								
EORMWT	144#								
ERKNT	358	574	615#						
ERRCOV	359	414	496#						
ERRIND	459	481#	582						
ERRR	357	360#	367	476	504				
ERRX	322	356#							
F3	358#	364							
FINAL	362	448	482#						
FIXDVC	281#	316	428	568					
FLO	534	587	602#						

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FREE	1330							
GET	420	542	549	553	560	563	5950	599
GO	340	351	377	433	4630	466	499	641
HERTZ	970							
HIGHFLD	520							
ICS	760							
IDISP	330	349	392	370	430	403	4060	400 500 500
ININT	624							
INT	179	2390						
IOTBL	2370	346	302	424	497	634		
IOTL00	292	4070						
IOTPTR	2940	303						
IOT0	293	294	302	3070				
IOT1	407	4600						
IOT4	400	4710						
IOT5	3400	409						
IOT6	410	4910						
IOT6C	411	4640						
IOT7	3230	412						
KCLR	413	4530						
KGOA	2240	460	496					
KL8A	2340	383	464					
KRSB	2290	340						
KSAF	2360	453						
KSBF	2330	491						
KSDR	2200							
KSEN	2260	471						
LOADA	2270							
LOOP	310	3300	342	347	303	432	400	630
LPT	5310	503						
LTA	660							
L374	600							
MCR	320	3340						
MCREP	670	90						
MCRSYS	1670							
MEVFLG	910							
MSGTBL	540	509	6120					
M8GHT	1520	153	172					
NETWT	1470							
NOTOK	1400							
NTASKS	443	4460						
OK	530	78	153	155	150	159		
OSFILL	440	4470						
OSFLDS	880							
OSKBDV	840							
OSYSO	850							
OSTT0V	870							
OS0	860							
OS0F	700	83						
PARTBL	790							
PARTNS	1590							
PDP12	550							
PDP8E	490							
PFLD	480							
POST	500	5420						
POSTDS	1270	541						
PWRP	1170	480						
PWRPAL	640							
P70	510							
	550	6160						

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RANDH	5500	600						
READX	3190	336	363					
READ11	556	6050						
RECEIV	1230	532						
RE8TBL	1500	159						
REHSW	419	423	444	4510				
RF00	720							
RK0	710	87	102					
RTNSTS	5010	620						
RUN	1250							
RUNWT	1420							
RW	535	550	6140	622	629	631	637	
RWCRC	327	3400						
RX0A	770							
SELERR	315	6190						
SEND	1220							
SENDW	1310							
SETUP	505	575	6210	642				
SHERTZ	900							
SKPINS	1200	529						
START	176	5200						
SUNIT	1030							
SUSPND	1260							
SWAPPE	700	101	157	159				
SWPWT	1430							
SYS	1020							
TASK	172	174	170	2400				
TEMPFN	425	431	4500					
TFTABL	1550	150	170					
TMP	297	290	301	3050				
TODH	1650							
TODL	1640							
TSTABL	1530	155	174					
TSMFLG	1630							
TTY	650							
UDC	135							
UNBARG	1320							
UNIT	410	426	540	566	6110			
USERWT	1450							
UT	429	4350						
UTIL	4170	546						
WAITE	1240	579						
WAITH	1100							
WCDF	552	569	571	6360				
WCRC	372	3020						
WRITEL	3640	379						
WRITEX	3630	623						
13756	362							
13757	359							
13760	350							
13761	354							
13762	340	351	377					
13763	346	302						
13764	335	349	352	370				
13765	319	350	364					
13766	315							
13767	313	355						
13770	312							
13771	311	353						
13772	309							

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13773	388	361
13774	299	
13775	292	
13776	284	
13777	283	
14156	585	
14157	582	
14160	588	
14161	497	
14162	482	
14163	476	584
14164	474	
14165	470	
14166	441	
14167	436	
14170	434	
14171	432	498
14172	429	
14173	428	
14174	424	
14175	421	
14176	420	
14177	418	426
14361	641	
14362	635	
14363	634	
14364	630	
14365	626	
14366	624	
14367	623	
14370	583	
14371	582	
14372	572	
14373	570	
14374	568	
14375	551	
14376	546	
14377	537	687

V3

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/PARAMETERS FOR RT8-8 TASKS (VERSION PAL8-V9D 89/11/75 PAGE 1

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/PARAMETERS FOR RT8-8 TASKS (VERSION 2)

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45
46      /RTS8 V2 EXEC PARAMETERS - EDITED BY USER
47
48      0001 PDP8E=1
49      0000 PDP12=0
50      0001 EAE=1
51      0001 PWRPAL=1
52      0030 HGMFLD=30
53      0023 NTASKS=23
54      0001 CHECKPT=1
55      0000 PARTNS=0
56
57      / (THE N PARTITIONS ARE NUMBERED FROM 0 TO N-1)
58
59      /COMMON TASK NUMBERS - EDITED BY USER
60      /IT IS ADVISABLE TO DEFINE ALL TASKS HERE, NAMES GIVEN BELOW
61      /ARE USED BY SOME SYSTEM TASKS AND SHOULD BE DELETED FROM THIS
62      /LIST IF THE CORRESPONDING TASK IS NOT INCLUDED IN THE SYSTEM
63
64      0001 CLOCK=1
65      0002 PWRP=2
66      0003 TTY=3
67      0004 LPT=4
68      0005 MCR=5
69      0006 LTA=6
70      0007 DTA=7
71      0021 SWAPPER=21
72      0010 RK8=10
73      0011 RF08=11
74      0012 DF32=12
75      0013 CSA=13
76      0014 CSAF=14
77      0016 ICS=16
78      0017 RX8A=17
79      0023 OS8=NTASKS
80      0020 OS8F=20
81
82      /SOFTWARE PARAMETERS - EDITED BY USER
83
84      0002 OSPLD8=2
85      0030 OSKBDV=30
86      0031 OSTTDV=31
87      0010 OSSYSDRK8
88      0004 OSFILL=4
89
90      0001 MCRSYS=1
91
92      0000 CLKTYP=0
93      0020 CLKOLN=20
94
95      0170 HERTZ=120
96      0074 SHERTZ=60
97
98      OCTAL
99

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100      0001 SWAPPER=1
101
102      0010 SYS=RK8
103      0000 SUNIT=0
104

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105      /EQUIVALENCES:
106
107      7344 AC7776= CLL STA RAL
108      7346 AC7775= CLL STA RTL
109      7330 AC4000= CLA STL RAR
110      7350 AC3777= CLL STA RAR
111      7332 AC2000= CLA STL RTR
112      7326 AC0002= CLA STL RTL
113
114      /MONITOR CALL VALUES:
115
116      4020 CAL= JMS 20 /CALL THE EXECUTIVE
117      5424 POSTDS= JMP I 24 /DISMISS AN INTERRUPT
118      4425 WAITM= JMS I 25 /WAIT FOR MULTIPLE EVENTS
119
120      /NOTE: "*" MEANS CRITICAL VALUE MAY NOT
121      /BE CHANGED WITHOUT MODIFYING SYSTEM CODE!!
122      0000 SEND= 0 /SEND MESSAGE
123      0001 RECEIV= 1 /RECEIVE MESSAGE
124      0002 WAITE= 2 /WAIT FOR EVENT FLAG
125      0003 RUN= 3 /CONTINUE TASK EXECUTION
126      0004 SUSPNO= 4 /SUSPEND TASK EXECUTION
127      0005 POST= 5 /POST AN EVENT FLAG
128      0006 SKPINS= 6 /INSERT CODE INTO INTERRUPT SKIP CHAIN
129      0007 DERAILE= 7 /INITIATE END-ACTION
130      0010 BLKARG= 10 /BLOCK TASK FOR REASON SPECIFIED IN ARG
131      0011 SENDM= 11 /SEND MESSAGE AND WAIT
132      0012 UNBARG= 12 /UNLOCK TASK FOR REASON SPECIFIED IN ARG
133      4000 FREE= 4000 /**FREE PARTITION
134
135      IFDEF UDC 4A00B/DO=1/BI=2/GC=3/EC=4/RC=5
136      DC=6/ECT=7/C0=10/ECT=11/AI=12
137
138      /TASK STATUS FLAGS:
139
140      4000 NONRHT= 4000 /**NONRESIDENT TASK WAIT
141      2000 EFHT= 2000 /EVENT FLAG WAIT
142      1000 RUNHT= 1000 /SCHEDULE WAIT
143      0400 SHPHT= 0400 /**SWAPPER WAIT
144      0200 EORMHT= 0200 /EVENT FLAG OR MESSAGE WAIT
145      0100 USERHT= 0100 /USER SPECIFIED WAIT
146      0040 ENAGHT= 0040 /ENABLE WAIT
147      0020 MSGHT= 0020 /MESSAGE WAIT
148      0010 NETHT= 0010 /NETWORK WAIT (RESERVED FOR POSSIBLE FUTURE USE)
149      0001 DNEHT= 0001 /**DOES NOT EXIST WAIT

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150      /SYSTEM LOCATIONS:
151
152      1176 MSGTBL= 1200-2 /TASK MESSAGE TABLE
153      1240 TSTABL= NTASKS*2+MSGTBL-4 /TASK STATE TABLE = HOLDS
154      /TASK LINK,UM,DP,IF,PC,AC,MQ
155      1367 TFTABL= NTASKS*2+TSTABL-1 /TASK FLAG TABLE = HOLDS
156      /TASK STATUS FLAGS
157
158      IFDEF SWAPPER 4
159      1414 RESTBL= TFTABL+NTASKS*2 /RESIDENCY TABLE
160      1420 PARTBL= NTASKS*SWAPPER+2+RESTBL+367774 /PARTITION TABLE
161      0043 COMMAND=43 /SWAPPER COMMAND BUFFER
162
163      0035 TSWFLG= 35 /TASK SW INHIBIT FLAG IN FIELD 0
164      0036 TODL= 36 /LOW ORDER TIME OF DAY IN FIELD 0
165      0037 TODH= 37 /HIGH ORDER TIME OF DAY IN FIELD 0
166      0040 DATE= 40 /DATE IN OS0 FORMAT IN FIELD 0
167      0041 MCREP= 41 /MCR START EVENT FLAG IN FIELD 0
168

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169 /TASK TABLE SETUP = "TASK", "CUR", "ININT", AND "START"
170 /MUST BE DEFINED BY TASK:
171
172 *TASK*2*MSGTBL
173 01226 0000 ZLOCK 2 /MESSAGE BUFFER INITIALLY CLEAR
174 *TASK*4*STABL
175 01324 0011 CUR10*CUR /INITIAL FLAGS
176 01325 3000 START
177 01326 0000 0 /INITIAL AC 0
178 *TASK*TPPTABL
179 01403 0000 ININT

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180 /CASSETTE ENTER, LOOKUP, CLOSE: RTSS V2 8/30/74
181 /
182 /
183 /
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224      /CSAP
225      /FORMAT OF MESSAGE IS:
226      /MSG,  ZLOCK 3
227      /WORD 1 OP,UNIT BIT      0=ENTER
228      /                      1=LOOKUP
229      /                      2=CLOSE
230      /                      3=11 B UNIT
231      /WORD 2 ADDRESS OF START OF HEADER INFO FOR ENTER+LOOKUP
232      /                      MUST ALL BE IN SAME FIELD
233      /                      STATUS WORD FOR CLOSE
234      /WORD 3 FIELD OF HEADER IN BITS 6-8 FOR ENTER+LOOKUP
235      /                      RESIZE PUT IN HEADER+13 BY LOOKUP
236      /                      0=NOT FOUND OR PHYSICAL ERROR
237      /WORD 4 STATUS WORD FOR ENTER+LOOKUP
238      /STATUS WORD RETURNS 8 STATUS FOR PHYSICAL ERROR(E,L,C) OR
239      /NEG, ERROR CODE FOR LOGICAL ERROR (NONE DEFINED YET)
240
241      0010      F1=10      /FIELD OF R/W BUFFER
242      0000      READ=0
243      0000      WRITE=4000
244      0010      REWIND=10
245      0030      BACKFI=30
246      0040      WRGAP=40
247      0050      BACKDL=50
248      0070      SKPFIL=70
249      0040      HSIZE=40
250
251      /PARAMETERS FOR RT88
252      0000      ININT=0
253      0010      CUR=10
254      0014      TASK=CSAP
255      0001      FIELD CURX=10

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256      3000      *3000
257      START,
258      13000 4020  LOOP,  CAL
259      13001 0001  RECEIV
260      13002 0000  ADDR,  0
261      13003 3244  DCA     FLD
262      13004 7346  AC7775
263      13005 1202  TAO     ADDR
264      13006 3241  DCA     MEVFLG
265      13007 3242  DCA     STATUS
266      13010 4243  JMS     CDFMSG
267      13011 1602  TAO I   ADDR
268      13012 6211  CDF     CUR
269      13013 3240  DCA     CUNIT
270      13014 1240  TAO     CUNIT  /DET, TYPE OF OPERATION
271      13015 7104  CLL RAL
272      13016 7430  SZL
273      13017 5246  JMP     ENTER
274      13020 7700  SMA CLA
275      13021 9777  JMP I   (CLOSE
276      13022 5776  JMP I   (LOOKUP
277
278      13023 7300  ALDONE, CLL CLA
279      13024 2202  ISZ ADDR
280      13025 1242  TAO     STATUS  /RETURN IT TO CALLER
281      13026 4243  JMS     CDFMSG
282      13027 3602  DCA I   ADDR
283      13030 6211  CDF     CUR
284      13031 1244  TAO     FLD
285      13032 3236  DCA     RFLD
286      13033 1241  TAO     MEVFLG
287      13034 4020  CAL
288      13035 0005  POST
289      13036 0000  RFLD,  0
290      13037 5200  JMP     LOOP
291      13040 0000  CUNIT,  0
292      13041 0000  MEVFLG, 0
293      13042 0000  STATUS, 0
294
295      13043 0000  CDFMSG, 0
296      13044 0000  FLD,   0
297      13045 5643  JMP I   CDFMSG

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298 13046 7300 ENTER, CLA CLL
299 13047 4262 JMS GETARG
300 13050 4775 JMS I (ENTLKP /SEE IF ALREADY EXISTS
301 13051 5223 LKPRTN, JMP ALDONE
302 13052 5254 JMP NTF /NO=NOT FOUND
303 13053 5333 JMP DELET /YES=DELETE IT
304 13054 4303 NTF, JMS BACK
305 13055 4774 JMS I (HANSET /DO A HANDLER OP
306 13056 0000 WRFLO, S
307 13057 0000 HDRADR, S
308 13060 5223 JMP ALDONE
309 13061 5223 JMP ALDONE
310
311 13062 0000 GETARG, S /GET ARG8 FROM CALLER'S MESSAGE
312 13063 2202 ISZ ADDR
313 13064 4243 JMS CDFMSG
314 13065 1602 TAD I ADDR /WORD 2
315 13066 3257 OCA HDRADR
316 13067 2202 ISZ ADDR
317 13070 7330 AC4000 /WRITE
318 13071 1602 TAD I ADDR /WORD 3
319 13072 6211 CDF CUR
320 13073 3256 OCA WRFLO
321 13074 5662 JMP I GETARG

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322 13075 0000 RDOOR, S
323 13076 0373 AND (374
324 13077 1372 TAD (=200
325 13100 7640 SZA CLA
326 13101 5223 JMP ALDONE /NOT CRC
327 13102 5675 JMP I RDOOR /WAS CRC
328
329 13103 0000 BACK, S
330 13104 4771 JMS I (UTILST
331 13105 0030 BACKFI /TO FILE GAP
332 13106 5223 JMP ALDONE /NON=ZERO
333 13107 4771 JMS I (UTILST
334 13110 0050 BACKBL
335 13111 5326 JMP BKERR /PASS STATUS
336 13112 1770 TAD I (OLDROZ
337 13113 3767 OCA I (RECSIZ
338 13114 4774 JMS I (HANSET /READ LAST REC OF PREV FILE
339 13115 0011 READ+F1+1 /DON'T STORE DATA
340 13116 3664 INCH
341 13117 4275 JMS RDOOR /ERROR READING LAST BLK
342 13120 4771 NEWGAP, JMS I (UTILST
343 13121 0040 WRGAP /WRITE NEW GAP
344 13122 5223 JMP ALDONE
345 13123 1366 TAD (MSIZE
346 13124 3767 OCA I (RECSIZ
347 13125 5703 JMP I BACK
348
349 13126 0365 BKERR, AND (3775 /AC=STATUS
350 13127 1364 TAD (=41 /CLEAR LEADER ERROR
351 13130 7640 SZA CLA
352 13131 5223 JMP ALDONE
353 13132 5320 JMP NEWGAP /YES=WRITE NEW GAP
354
355 13133 4303 DELET, JMS BACK
356 13134 4774 JMS I (HANSET
357 13135 4010 WRITE+F1
358 13136 3424 EMPTIN
359 13137 5223 JMP ALDONE
360 13140 1363 TAD (LKPRTN
361 13141 3775 OCA I (ENTLKP
362 13142 5762 JMP I (FLOOP
363
364 13162 3302
365 13163 3051
366 13164 7737
367 13165 3775
368 13166 0040
369 13167 3252
370 13170 3351
371 13171 3200
372 13172 7600
373 13173 0374
374 13174 3216
375 13175 3267
376 13176 3253

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377 13177 3400
378 3200 PAGE

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379
380 13200 0000 UTILST, 0
381 13201 1777 TAD I (CUNIT
382 13202 0376 AND (7
383 13203 3245 DCA MSG1
384 13204 1600 TAD I UTILST
385 13205 3246 DCA MSG2 /FNC
386 13206 2200 ISZ UTILST
387 13207 4775 JMS I (DOA
388 13210 1247 TAD MSG3
389 13211 3774 DCA I (STATUS
390 13212 1774 TAD I (STATUS
391 13213 7450 SNA
392 13214 2200 ISZ UTILST
393 13215 5600 JMP I UTILST
394
395 13216 0000 HANSET, 0
396 13217 1777 TAD I (CUNIT
397 13220 0376 AND (7
398 13221 1373 TAD (4000
399 13222 3245 DCA MSG1
400 13223 1616 TAD I HANSET
401 13224 3246 DCA MSG2 /FNC+BUFLD
402 13225 2216 ISZ HANSET
403 13226 1616 TAD I HANSET
404 13227 3247 DCA MSG3 /BUF
405 13230 1252 TAD RECSIZ
406 13231 3250 DCA MSG4
407 13232 2216 ISZ HANSET
408 13233 4775 JMS I (DOA
409 13234 1251 TAD MSG5
410 13235 3774 DCA I (STATUS
411 13236 1774 TAD I (STATUS
412 13237 7450 SNA
413 13240 2216 ISZ HANSET /GOOD RET
414 13241 5616 JMP I HANSET
415
416 13242 0000 MSG, ZBLOCK 3
417 13245 0000 MSG1, 0
418 13246 0000 MSG2, 0
419 13247 0000 MSG3, 0
420 13250 0000 MSG4, 0
421 13251 0000 MSG5, 0
422
423 13252 0000 RECSIZ, 0

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424 13253 4772 LOOKUP, JMS I (GETARG
425 13254 1771 TAD I (MDRADR
426 13255 1370 TAD I (13
427 13256 3352 DCA RETADR
428 13257 4267 JMS ENTLKP
429 13260 7008 NOP
430 13261 7410 SKP /ERROR
431 13262 1767 TAD I (INCH+13 /NOT FOUND
432 13263 4766 JMS I (CDFH85 /RECSIZE
433 13264 3752 DCA I RETADR
434 13265 6211 CDF CUR
435 13266 5765 JMP I (ALDONE
436
437 13267 0000 ENTLKP, 0
438 13270 1764 TAD I (WRFLD
439 13271 1363 TAD I (2201 /ALREADY HAS 4000
440 13272 3327 DCA USRFLD
441 13273 4200 JMS UTILST
442 13274 0010 REMIND
443 13275 5343 JMP STSET /ERROR
444 13276 1362 TAD (MSIZE
445 13277 3252 DCA RECSIZ
446 13280 3350 DCA FILNUM
447 13301 5305 JMP FL2
448 13302 4200 FLOOP, JMS UTILST
449 13303 0070 SKPPIL
450 13304 5343 JMP STSET
451 13305 2350 FL2, ISZ FILNUM
452 13306 4216 JMS HANSET
453 13307 0010 READ+F1
454 13310 3464 INCH /BUFFER
455 13311 5343 JMP STSET
456 13312 1361 TAD (INCH
457 13313 3345 DCA P1
458 13314 1745 TAD I P1
459 13315 7650 SNA CLA
460 13316 5342 JMP NFNDRT /SENTINEL, FILE NOT FOUND
461 13317 1767 TAD I (INCH+13
462 13320 3351 DCA OLDRSZ /FOR ENTER-FOUND RETURN'S BACKSPACE
463 13321 1771 TAD I (MDRADR
464 13322 3346 DCA P2
465 13323 1360 TAD (=10 /FIRST 10 CHARACTERS
466 13324 3347 DCA SCNT
467 13325 1745 SLOOP, TAD I P1
468 13326 7041 CIA
469 13327 0000 USRFLD, 0
470 13330 1746 TAD I P2
471 13331 6211 CDF CUR
472 13332 0357 AND (177 /MATCH HI 7
473 13333 7640 SZA CLA
474 13334 5302 JMP FLOOP /NOT CORRECT FILE KEY
475 13335 2345 ISZ P1
476 13336 2346 ISZ P2
477 13337 2347 ISZ SCNT
478 13340 5325 JMP SLOOP

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479 13341 2267 ISZ ENTLKP /FOUND
480 13342 2267 NFNDRT, ISZ ENTLKP /NOT FOUND
481 13343 3774 STSET, DCA I (STATUS /ALL HAVE STATUS IN AC(0 FOR FOUND+NOT FOUND)
482 13344 5667 JMP I ENTLKP
483
484 13345 0000 P1, 0
485 13346 0000 P2, 0
486 13347 0000 SCNT, 0
487 13350 0000 FILNUM, 0
488 13351 0000 OLDRSZ, 0
489 13352 0000 RETADR, 0
490
491 13357 0177
492 13360 7770
493 13361 3464
494 13362 0040
495 13363 2201
496 13364 3056
497 13365 3023
498 13366 3043
499 13367 3477
500 13370 0013
501 13371 3057
502 13372 3062
503 13373 4000
504 13374 3062
505 13375 3415
506 13376 0007
507 13377 3060
508

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509	13400	4777	CLOSE,	JMS I	(UTILST
510	13401	0040		WRGAP	
511	13402	5776		JMP I	(ALDONE /ERROR WRITING GAP
512	13403	1375		TAD	(MSIZE
513	13404	3774		DCA I	(REC812
514	13405	4773		JMS I	(HANSET /WRITE SENTINEL
515	13406	4010		WRITE=F1	
516	13407	3423		ZER	
517	13410	5776		JMP I	(ALDONE
518	13411	4777		JMS I	(UTILST
519	13412	0010		REWIND	
520	13413	5776		JMP I	(ALDONE
521	13414	5776		JMP I	(ALDONE
522					
523	13415	0000	OOA,	0	
524	13416	4020		CAL	
525	13417	0011		SENDW	
526	13420	0013		CSA	
527	13421	3242		MSG	
528	13422	5615		JMP I	OOA
529					
530	13423	0000	ZER,	0	
531	13424	0052	EMPTIN,	52/105/115/120/124/131/40/40/40/14	
532	13425	0105			
533	13426	0115			
534	13427	0120			
535	13430	0124			
536	13431	0131			
537	13432	0040			
538	13433	0040			
539	13434	0040			
540	13435	0014			
541	13436	0000		010/0/0/40/40/40/40/40/40	
542	13437	0000			
543	13440	0000			
544	13441	0000			
545	13442	0040			
546	13443	0040			
547	13444	0040			
548	13445	0040			
549	13446	0040			
550	13447	0040			
551	13450	0000		ZBLOCK 14	
552	13464	0000	INCH,	ZBLOCK 40	/USED BY LOOKUP FOR READING HEADER
553					
554	13573	3216			
555	13574	3252			
556	13575	0040			
557	13576	3023			
558	13577	3200			
559					

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AC0002	7326	LOOKUP	3253	SENDW	0011
AC2000	7332	LOOP	3000	SHERTZ	0074
AC3777	7350	LPT	0004	SKPFIL	0070
AC4000	7330	LTA	0006	SKPIN8	0006
AC7775	7346	MCR	0005	0LOOP	3325
AC7776	7344	MCRF	0041	START	3000
ADDR	3002	MCR8Y0	0001	STATUS	3042
ALDONE	3023	MEVFLG	3041	STSET	3343
BACK	3103	MSG	3242	SUNIT	0000
BACKBL	0050	MSGT0L	1176	SUSPND	0004
BACKFI	0030	MSGT	0020	SWAPPE	0021
BKERR	3126	MSG1	3245	SWPWT	0400
BLKARG	0010	MSG2	3246	SYS	0010
CAL	4020	MSG3	3247	TASK	0014
CDMSG	3043	MSG4	3250	TFTABL	1367
CHECKP	0001	MSG5	3251	TODM	0037
CLKQLN	0020	NETWT	0010	TODL	0036
CLKTYP	0000	NEWGAP	3120	TSTABL	1244
CLOCK	0001	NFNDRT	3342	TSHFLG	0035
CLOSE	3400	NONRWT	4000	TTY	0003
COMMAN	0043	NTASKS	0023	UNBARG	0012
CSA	0013	NTF	3054	USERNT	0100
CSAF	0014	OLORSZ	3351	USRFLD	3327
CUNIT	3040	OSFILL	0004	UTILST	3200
CUR	0010	OSFLDS	0002	WAITE	0002
DATE	0040	OSKBDV	0030	WAITH	4025
DELET	3133	OSSYSD	0010	WRFLD	3056
DERAIL	0007	OSTTDOV	0031	WRGAP	0040
OF32	0012	OS0	0023	WRITE	4000
DNEWI	0001	OS0F	0020	ZER	3423
OOA	3415	PARTBL	1420		
DTA	0007	PARTNS	0000		
EAE	0001	POP12	0000		
EFWT	2000	POP0E	0001		
EMPTIN	3424	POST	0005		
ENABWT	0040	POSTDS	5424		
ENTER	3046	PWRF	0002		
ENTLKP	3267	PWRFAL	0001		
EORMWT	0200	P1	3345		
FILNUM	3350	P2	3346		
FLD	3044	RDR	3075		
FLOOP	3302	READ	0000		
FL2	3305	RECEIV	0001		
FREE	4000	REC812	3252		
F1	0010	REYBL	1414		
GETARG	3062	REYADR	3352		
HANSET	3216	REWIND	0010		
HDRADR	3057	RFLD	3036		
HERTZ	0170	RF00	0011		
HGMFLD	0030	RK0	0010		
MSIZE	0040	RUN	0003		
ICS	0016	RUNWT	1000		
INCH	3464	RK0A	0017		
INIWT	0000	SCNT	3347		
LKPRTN	3051	SEND	0000		

306

LKPRTN	301#	360					
LOOKUP	276	424#					
LOOP	290#	290					
LPT	66#						
LTA	68#						
MCR	67#	90					
MCREP	167#						
MCRSYS	91#						
MEYFLG	264	286	292#				
MSG	416#	327					
MSGYDL	152#	153	172				
MSGWT	147#						
MSG1	303	399	417#				
MSG2	305	401	410#				
MSG3	308	404	419#				
MSG4	406	420#					
MSG5	409	421#					
NETWT	148#						
NEWGAP	342#	353					
NPNORT	460	480#					
NTASK#	53#	70	153	155	150	159	
NTF	302	304#					
OLDRSZ	336	462	488#				
OSFILL	88#						
OSFLD#	84#						
OSKBDY	85#						
OSYSD	87#						
OSTTOV	86#						
OS#	70#	83					
OSOF	79#						
PARTBL	159#						
PARTNS	55#						
POPI2	49#						
POPGE	48#						
POST	127#	200					
POSTDS	117#						
PWRP	64#						
PWRPAL	51#						
P1	457	450	467	475	484#		
P2	464	470	476	485#			
RDOR	322#	327	341				
READ	242#	339	453				
RECEIV	123#	259					
RECEIZ	337	346	405	423#	445	513	
RESTR	150#	159					
RETAOR	427	433	489#				
REWIND	244#	442	519				
RFLD	205	209#					
RF#	72#						
RK#	71#	87	102				
RUN	125#						
RUNWT	142#						
RX#A	77#						
SCNT	466	477	486#				
SEND	122#						
SENDW	131#	525					
SHERTZ	90#						
SKPFIL	240#	449					
SKPINS	120#						
SLOOP	467#	478					

307

START	176	257#							
STATUS	265	280	293#	309	390	410	411	401	
STSET	443	450	455	481#					
SUNIT	103#								
SUSPND	126#								
SWAPPE	70#	101	157	199					
SWPWT	143#								
SY#	102#								
TASK	172	174	178	254#					
TFTABL	155#	158	178						
TODH	165#								
TODL	164#								
TSTABL	153#	155	174						
TSHFLG	163#								
TTY	65#								
UDC	135								
UNBARG	132#								
USERWT	145#								
USRFLD	440	449#							
UTILST	330	333	342	380#	384	386	392	393	441
	509	510							440
WAITE	124#								
WAITH	110#								
WRFLD	306#	320	430						
WRGAP	246#	343	510						
WRITE	243#	357	515						
ZER	516	530#							
+13162	362								
+13163	360								
+13164	350								
+13165	349								
+13166	345								
+13167	337	346							
+13170	336								
+13171	330	333	342						
+13172	324								
+13173	323								
+13174	305	330	356						
+13175	300	361							
+13176	276								
+13177	275								
+13357	472								
+13360	465								
+13361	456								
+13362	444								
+13363	439								
+13364	438								
+13365	435								
+13366	432								
+13367	431	461							
+13370	426								
+13371	425	463							
+13372	424								
+13373	390								
+13374	389	390	410	411	401				
+13375	387	400							
+13376	382	397							
+13377	381	396							
+13573	514								
+13574	513								

308

13575	512			
13576	511	517	520	521
13577	509	510		

V3

309

/PARAMETERS FOR RTS-8 TASKS (VERSION PAL8-V90 09/11/75 PAGE 1

1	/PARAMETERS FOR RTS-8 TASKS (VERSION 2)
2	/
3	/
4	/
5	/
6	/
7	/
8	/
9	/
10	/
11	/COPYRIGHT (C) 1974,1975 BY DIGITAL EQUIPMENT CORPORATION
12	/
13	/
14	/
15	/
16	/
17	/
18	/
19	/
20	/
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35	/
36	/
37	/
38	/
39	/
40	/
41	/
42	/
43	/
44	/

```

45
46      /RTS8 V2 EXEC PARAMETERS - EDITED BY USER
47
48      0001 PDP0E=1
49      0000 PDP12=0
50      0001 EAE=1
51      0001 PWRFLD=1
52      0030 MGHFLD=30
53      0023 NTASKS=23
54      0001 CHECKPT=1
55      0000 PARTNS=0
56
57      /((THE N PARTITIONS ARE NUMBERED FROM 0 TO N-1))
58
59      /COMMON TASK NUMBERS - EDITED BY USER
60      /IT IS ADVISABLE TO DEFINE ALL TASKS HERE, NAMES GIVEN BELOW
61      /ARE USED BY SOME SYSTEM TASKS AND SHOULD BE DELETED FROM THIS
62      /LIST IF THE CORRESPONDING TASK IS NOT INCLUDED IN THE SYSTEM
63
64      0001 CLOCK=1
65      0002 PWRP=2
66      0003 TTY=3
67      0004 LPT=4
68      0005 MCR=5
69      0006 LTA=6
70      0007 DTA=7
71      0021 SHAPPER=21
72      0010 RK0=10
73      0011 RPO0=11
74      0012 DF32=12
75      0013 CSA=13
76      0014 CSAF=14
77      0016 ICS=16
78      0017 RX0A=17
79      0023 OS0=NTASKS
80      0020 OS0P=20
81
82      /SOFTWARE PARAMETERS - EDITED BY USER
83
84      0002 OSFLDS=2      IFDEF   DSS      <
85      0030 OSKDDV=30
86      0031 OSTTGV=31
87      0010 OSSYSO=RK0
88      0004 OSFILL=4
89      >
90      0001 MCRSYS=1      IFDEF   MCR      <
91      >
92      0000 CLKTP=0      IFDEF   CLOCK    <
93      0020 CLKQLN=20
94      >
95      0000 CLKQLN=20
96      0070 HERTZ=120    DECIMAL
97      0074 SHERTZ=40
98      OCTAL
99

```

311

```

100      >
101      IFDEF   SHAPPER <
102      0010 SYS=RK0
103      0000 SUNIT=0
104      >

```

/EQUIVALENCES:

7344 AC7776= CLL STA RAL
 7346 AC7775= CLL STA RTL
 7330 AC4000= CLA STL RAR
 7350 AC3777= CLL STA RAR
 7332 AC2000= CLA STL RTR
 7326 AC0002= CLA STL RTL

/MONITOR CALL VALUES:

4020 CAL= JMS 20 /CALL THE EXECUTIVE
 5424 POSTOS= JMP I 24 /DISMISS AN INTERRUPT
 4425 WAITM= JMS I 25 /WAIT FOR MULTIPLE EVENTS

/NOTE: "*" MEANS CRITICAL VALUE MAY NOT
 /BE CHANGED WITHOUT MODIFYING SYSTEM CODE!!
 0000 SEND= 0 /SEND MESSAGE
 0001 RECEIV= 1 /RECEIVE MESSAGE
 0002 WAITE= 2 /WAIT FOR EVENT FLAG
 0003 RUN= 3 /CONTINUE TASK EXECUTION
 0004 SUSPND= 4 /SUSPEND TASK EXECUTION
 0005 POST= 5 /POST AN EVENT FLAG
 0006 SKPINS= 6 /INSERT CODE INTO INTERRUPT SKIP CHAIN
 0007 DERRAIL= 7 /INITIATE END-ACTION
 0010 BLKARG= 10 /BLOCK TASK FOR REASON SPECIFIED IN ARG
 0011 SENDW= 11 /SEND MESSAGE AND WAIT
 0012 UNBARG= 12 /UNBLOCK TASK FOR REASON SPECIFIED IN ARG
 4000 FREE= 4000 /**FREE PARTITION

IPDEF UOC 4A0=0;D0=1;D1=2;GC=3;EC=4;RC=5
 OC=6;ECT=7;CS=10;DCT=11;AI=12

/TASK STATUS FLAGS:

4000 NONRWT= 4000 /**NONRESIDENT TASK WAIT
 2000 EPWT= 2000 /EVENT FLAG WAIT
 1000 RUNWT= 1000 /SCHEDULE WAIT
 0400 SWPWT= 0400 /**SWAPPER WAIT
 0200 EORMWT= 0200 /EVENT FLAG OR MESSAGE WAIT
 0100 USERWT= 0100 /USER SPECIFIED WAIT
 0040 ENASWT= 0040 /ENABLE WAIT
 0020 MSGWT= 0020 /MESSAGE WAIT
 0010 NETWT= 0010 /NETWORK WAIT (RESERVED FOR POSSIBLE FUTURE USE)
 0001 ONENT= 0001 /**DOES NOT EXIST WAIT

313

/SYSTEM LOCATIONS:

1176 MSGTBL= 1200=2 /TASK MESSAGE TABLE
 1244 TSTABL= NTASKS*2+2+MSGTBL=4 /TASK STATE TABLE = HOLDS
 1367 TFTABL= NTASKS*2+4+TSTABL=1 /TASK LINK,UM,DP,IF,PC,AC,MQ
 /TASK FLAGS TABLE = HOLOS
 /TASK STATUS FLAGS
 IPDEF SWAPPER <
 1414 RESTBL= TFTABL+NTASKS*2 /RESIDENCY TABLE
 1420 PARTBL= NTASKS*SWAPPER*2+RESTBL+3&7774 /PARTITION TABLE
 0043 COMHAND=43 /SWAPPER COMMAND SUFFER
 0035 TSWFLG= 35 /TASK SW INHIBIT FLAG IN FIELD 0
 0036 TODL= 36 /LOW ORDER TIME OF DAY IN FIELD 0
 0037 TODH= 37 /HIGH ORDER TIME OF DAY IN FIELD 0
 0040 DATE= 40 /DATE IN OSS FORMAT IN FIELD 0
 0041 MCREP= 41 /MCR START EVENT FLAG IN FIELD 0

```

169 /TASK TABLE SETUP = "TASK", "CUR", "INIHT", AND "START"
170 /MUST BE DEFINED BY TASK:
171
172 1202 *TASK=2+MSGTBL
173 01202 0000 ZBLOCK 2 /MESSAGE BUFFER INITIALLY CLEAR
174 1254 *TASK=4+TSTABL
175 01254 0011 CURX10=CUR /INITIAL FLAGS
176 01255 0200 START
177 01256 0000 0 /INITIAL AC 0
178 1371 *TASK=TPTABL
179 01371 0000 INIHT

```

315

```

180 /RTS-8 POWER FAIL RECOVERY TASK
181 /
182 /
183 /
184 /
185 /
186 /
187 /
188 /
189 /
190 /COPYRIGHT (C) 1974,1975 BY DIGITAL EQUIPMENT CORPORATION
191 /
192 /
193 /
194 /
195 /
196 /
197 /
198 /
199 /
200 /
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222 /
223 /

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316

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224
225 /THIS TASK IS EXECUTED WHEN POWER RETURNS AFTER A POWER FAILURE. IT
226 /RESTORES THE CLOCK AND TELETYPE FLAGS ITSELF, BUT DEPENDS ON OTHER
227 /RTS-8 HANDLERS TO PROVIDE A ROUTINE WHICH, WHEN CALLED, RE-INITIALIZES
228 /THEIR DEVICE.
229
230 /THE ACTION TO BE TAKEN ON POWER FAILURE IS DETERMINED BY THE
231 /CONTENTS OF THE TABLE "PFLTBL", WHICH CONTAINS ONE WORD
232 /PER TASK. A TASK MAY ALTER ITS WORD IN THIS TABLE BY SENDING A
233 /MESSAGE TO THE POWER-FAIL TASK. THE FORMAT OF THE MESSAGE IS:
234
235 /WORD 1      EVENT FLAG (RTS-8 PUTS TASK NUMBER IN LOW BITS)
236 /WORDS 2-3   RESERVED FOR RTS-8
237 /WORD 4      NEW TABLE ENTRY VALUE
238
239 /IF THE TABLE ENTRY VALUE IS 0, NOTHING WILL BE DONE FOR THE
240 /CORRESPONDING TASK. IF THE VALUE IS 7777, THE TASK'S EVENT FLAG
241 /WAIT BIT WILL BE CLEARED. IF THE VALUE IS BETWEEN 0 AND 7777, IT
242 /IS CONSIDERED TO BE THE ADDRESS OF A SUBROUTINE IN THE TASK'S FIELD
243 /TO WHICH THE TASK WILL BE DERAILED WITH ITS EVENT FLAG WAIT BIT CLEARED.
244
245 0002 TASK=  PNRF
246 0010 CUR=   10
247 0000 ININT= 0

```

317

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248 /INITIALIZATION CODE
249
250 0001 FIELD CURX10
251 0200 *200
252
253 10200 7240 START, STA
254 10201 6201 PTR, CDF 0
255 10202 1777 CYR, TAD I (3 /GET POINTER TO POWER-FAIL EVENT FLAG
256 10203 3203 PWFLEF, DCA PWFLEF /WHICH IS ONE LOC BEFORE POWER-UP ROUTINE
257 10204 1376 TAO (4000+TASK
258 10205 3603 DCA I PWFLEF /INITIALIZE IT TO "WAITING"
259
260 10206 6002 PWFLLP, IOF /TESTING TWO THINGS - MUST HAVE IOF
261 10207 6201 CDF 0
262 10210 1603 TAO I PWFLEF /HAS POWER GONE DOWN AND COME UP?
263 10211 7650 SNA CLA
264 10212 5252 JMP POWRUP /YES
265 10213 1775 TAD I (TASK*2+MSGTBL
266 10214 7640 SZA CLA /ANY MESSAGES FOR ME?
267 10215 5223 JMP GETMSG /YES - GO READ MAIL
268 10216 6202 CIF 0
269 10217 6211 CDF CUR /NOTHING TO DO -
270 10220 4425 WAITM /WAIT FOR SOMETHING TO HAPPEN
271 10221 0200 EORHWT
272 10222 5206 JMP PWFLLP /ARISE, FAIR DANSELI
273
274 10223 6001 GETMSG, ION
275 10224 4020 CAL
276 10225 0001 RECEIVE /GET PENDING MESSAGE
277 10226 0000 HADDR, 0
278 10227 3230 DCA *,+1
279
280 10230 7402 MSGCDF, HLT /SET DP TO MESSAGE FIELD
281 10231 1230 TAD MSGCDF
282 10232 3250 DCA MSGCDF /SAVE CDF FOR POST CAL
283 10233 7346 ACT775
284 10234 1226 TAD HADDR
285 10235 3230 OCA MEFPTR /POINT TO MESSAGE EVENT FLAG
286 10236 1630 TAO I MEFPTR /WHICH CONTAINS SENDING TASK NUMBER
287 10237 0374 AND (177 /IN LOW ORDER 7 BITS
288 10240 1373 TAD (PFLTBL
289 10241 3201 DCA PTR
290 10242 1624 TAD I HADDR /GET NEW TABLE ENTRY
291 10243 6211 CDF CUR
292 10244 3601 DCA I PTR /STORE IT
293 10245 1230 TAD MEFPTR
294 10246 4020 CAL
295 10247 0005 POST /POST MESSAGE EVENT FLAG
296 10250 0000 HEFCDF, 0
297 10251 5206 JMP PWFLLP

```

318

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298 /HERE ON POWER UP
299
300 10252 1376 POWRUP, TAD (4000+TASK
301 10253 3603 OCA I PMFLEP /RESET FLAG FOR NEXT POWER FAILURE
302 10254 6211 CDF CUR
303 10255 6001 ION /RESTORE INTERRUPTS
304
305 /RESTORE CLOCK AND TELETYPE FLAGS AND INTERRUPT ENABLES
306
307 10256 6046 IFDEF TTY <TL3> /ONLY SURE WAY TO SET TTY FLAG
308 10257 6316 IFDEF O88 <O8TVDV"10+6006"> /DITTO FOR O8/8 TTY
309 IFDEF CLOCK 4
310 0002 TICKS= HERTZSHERTZ
311 10260 6131 IFZERO CLKTP <6131> /ENABLE CLOCK INTS FOR OK8EA,C
312 IFNZRO CLKTP&1 4 /COMMON DK8EP, KW12 INIT CODE
313 TICKS= 1750XSHERTZ
314 IFZERO CLKTP=3 4 /SPECIFIC DK8EP INIT CODE
315 CLZE= 6130
316 STA
317 CLZE /ZERO COMMAND REGISTER ON DK8EP
318 TAO (5311-4100 /5310 = ENABLE INTS, 1 KHZ, MODE 1
319 >
320 6132 /CALLED CLDE ON DK8EP
321 CLAR= 6133
322 TAD (4100 /4100 = 1 KHZ, MODE 1
323 CLLR /LOAD COMMAND REGISTER
324 CLA /CLLR DOESN'T CLEAR AC
325 TAD (=TICKS
326 CLAR /SCALE DOWN CLOCK TO SOFTWARE RATE
327 CLA /DOES NOT CLEAR AC
328 >
329 IFZERO CLKTP=1 4 /SPECIFIC KW12 INIT CODE
330 CLEN= 6134
331 TAD (300 /FORCE CLOCK BUFFER INTO COUNTER AND
332 CLEN /ENABLE KW12 INTERRUPTS
333 CLA /THIS DOESN'T CLEAR AC EITHER
334 >
335 IFZERO CLKTP=2 4 /VT8E INIT CODE
336 DPGO= 6051
337 OPSM= 6052 /VT8E INSTRUCTIONS TO START AND STOP DISPLAY
338 CLA IAC
339 OPGO /START VT8E AT A RANDOM ADDRESS,
340 OPSM /ENABLING INTERRUPTS = THEN STOP IT IMMEDIATELY
341 CLA /((JUST IN CASE)
342 >
343 /END OF CLOCK CONDITIONAL
344 10261 7201 CLA IAC
345 10262 3202 OCA CTR

```

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346 /PERFORM TASK-DEPENDENT ACTIONS
347
348 10263 1202 PWRUPL, TAD CTR
349 10264 1373 TAD (PFLTBL
350 10265 3201 DCA PTR
351 10266 1601 TAO I PTR /GET CONTROL WORD FOR THIS TASK
352 10267 7450 SNA
353 10270 5306 JMP PWRUPN /NOTHING TO DO
354 10271 7040 CMA
355 10272 7450 SNA
356 10273 5302 JMP PWRUPE /JUST CLEAR EVENT FLAG WAIT
357 10274 7040 CMA
358 10275 3301 DCA
359 10276 1202 TAD DRLADR
360 10277 4020 CAL CTR
361 10300 0007 DERAIL /OERAIL THE TASK
362 10301 0000 DRLADR, 0 /INTO THE SUBROUTINE OF ITS CHOICE
363 10302 1202 PWRUPE, TAD CTR
364 10303 4020 CAL
365 10304 0012 UNBARG
366 10305 2200 EFWTIEORHWT /CLEAR ALL FLAGS DEPENDING ON EFWT
367 10306 1202 PWRUPN, TAD CTR
368 10307 1372 TAD (=NTASKS
369 10310 7650 SNA CLA /THROUGH?
370 10311 5206 JMP PWFLLP /YES
371 10312 2202 ISZ CTR
372 10313 5263 JMP PWRUPL
373 IFZERO NTASKS-40&4000 <PAGE>
374 10314 0000 PFLTBL, ZBLOCK NTASKS+1 /FIRST WORD NOT USED
375 IFDEF DTA 4
376 0323 *PFLTBL+DTA
377 10323 7777 =1
378 >
379 IFDEF RK8 4
380 0324 *PFLTBL+RK8
381 10324 7777 =1
382 >
383 IFDEF RF08 4
384 0325 *PFLTBL+RF08
385 10325 7777 =1
386 >
387 IFDEF DF32 4
388 0326 *PFLTBL+DF32
389 10326 7777 =1
390 >
391 IFDEF LPT 4
392 0320 *PFLTBL+LPT
393 10320 7777 =1
394 >
395 10372 7755
396 10373 0314
397 10374 0177
398 10375 1202
399 10376 4002
400 10377 0003

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401
402

0400

PAGE
3-8-8

321

/RTS-8 POWER FAIL RECOVERY TASK

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AC0002 7326
AC2000 7332
AC3777 7350
AC4000 7330
AC7775 7346
AC7776 7344
BLKARG 0010
CAL 4020
CHECKP 0001
CLKQLN 0020
CLKTYP 0000
CLOCK 0001
COMMAN 0043
CSA 0013
CSAF 0014
CTR 0202
CUR 0010
DATE 0040
DERAIL 0007
DF32 0012
DNEW 0001
ORLADR 0301
OTA 0007
EAE 0001
EFWT 2000
ENABWT 0040
EORMWT 0200
FREE 4000
GETMSG 0223
HERTZ 0170
HGFLO 0030
ICS 0016
INIWT 0000
LPT 0004
LTA 0006
MADOR 0226
MCR 0005
MCREP 0041
MCRSY8 0001
MEPCOF 0250
MEPPT 0230
MSGCOF 0230
MSGTBL 1176
MSGWT 0020
NETWT 0010
NONRWT 4000
NTASKS 0023
OSFILL 0004
OSFLOS 0002
OSKBDV 0030
OSSYSD 0010
OSTTOV 0031
OSA 0023
OSOF 0020
PARTBL 1420

PARTNS 0000
POP12 0000
POP0E 0001
PFLTBL 0314
POST 0005
POSTDS 5424
POWRUP 0252
PTR 0201
PWFLEF 0203
PWFLLP 0206
PWRP 0002
PWRFAL 0001
PWRUPE 0302
PWRUPL 0263
PWRUPN 0306
RECEIV 0001
RESTBL 1414
RF08 0011
RK8 0010
RUN 0003
RUNWT 1000
RX8A 0017
SEND 0000
SENDW 0011
SHERTZ 0074
SKPINS 0006
START 0200
SUNIT 0000
SUSPND 0004
SWAPPE 0021
SWPWT 0400
SYS 0010
TASK 0002
TFTABL 1367
TICKS 0002
TODH 0037
TODL 0036
TSTABL 1244
TSHPLG 0035
TTY 0003
UNBARG 0012
USERWT 0100
WAITE 0002
WAITH 4425

322

ERRORS DETECTED: 0
LINKS GENERATED: 0

323

AC0002	112#						
AC2000	111#						
AC3777	110#						
AC4000	109#						
AC7775	108#	203					
AC7776	107#						
AO	135#						
BLKARG	130#						
CAL	116#	275	294	360	364		
CHECKP	54#						
CLAG	321#	326					
CLEN	330#	332					
CLKQLN	95#						
CLKTYP	94#	311	312	314	329	335	
CLLR	320#	323					
CLOCK	63#	93	309				
CLZE	315#	317					
COHMAN	160#						
CS	130#						
CBA	74#						
CBAF	75#						
CT	136#						
CTR	255#	345	348	359	363	367	371
CUR	175	175	246#	250	269	291	302
DATE	166#						
DERAIL	129#	361					
DF32	73#	307	308				
ONEWT	149#						
DPOO	336#	339					
DPSM	337#	340					
DRLADR	350	362#					
DTA	69#	375	376				
EAE	50#						
EFWT	141#	366					
ENABHT	146#						
EORMHT	144#	271	366				
FREE	133#						
GETHSG	267	274#					
HERTZ	97#	310					
HGMFLD	52#						
ICS	76#						
INIWT	179	247#					
LPT	66#	391	392				
LTA	68#						
MADDR	277#	284	290				
MCR	67#	90					
MCREP	167#						
MCRSYS	91#						
MEPCDF	202	296#					
MEPPTR	279#	285	286	293			
MSGCDF	200#	201					
MSGTBL	152#	153	172	265			
MSGWT	147#						
NETWT	140#						
NTASKS	53#	70	153	155	150	159	360
OSFILL	80#						373
OSFLDS	84#						374
OSKBDV	85#						
OSYSIO	87#						

324

OSTTDV	868	388					
OSB	788	83	308				
OSBF	798						
PARTBL	1598						
PARTNS	558						
PDP12	498						
PDP8E	488						
PFLYBL	288	349	3748	376	388	384	392
POST	1278	295					
POSTDS	1178						
PONRUP	264	3888					
PTR	2548	289	292	358	351		
PWFLEP	2568	256	258	262	381		
PWFLLP	2688	272	297	378			
PWRP	648	245					
PWRFAL	518						
PWRUPE	356	3638					
PWRUPL	3488	372					
PWRUPN	353	3678					
RECEIV	1238	276					
RESTD	1588	159					
RF88	728	383	384				
RK8	718	87	182	379	388		
RUN	1258						
RUNNT	1428						
RX8A	778						
SEND	1228						
SENDH	1318						
SHERTZ	988	318	313				
SKPINS	1288						
START	176	2538					
SUNIT	1838						
SUSPND	1268						
SWAPPE	708	181	157	159			
SWPMT	1438						
SYS	1828						
TASK	172	174	178	2458	257	265	388
TFTABL	1558	158	178				
TICKS	318	3138	325				
TOOH	1658						
TOOL	1648						
TSTABL	1538	155	174				
TSWFLG	1638						
TTY	658	387					
UDC	135						
UNBARG	1328	365					
USERMT	1458						
WAITE	1248						
WAITM	1188	278					
+18372	368						
+18373	288	349					
+18374	287						
+18375	265						
+18376	257	388					
+18377	255						

V3

325

/PARAMETERS FOR RTS=8 TASKS (VERSION PAL8-V9D 89/11/75 PAGE 1

```

1 /PARAMETERS FOR RTS=8 TASKS (VERSION 2)
2 /
3 /
4 /
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7 /
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10 /
11 /COPYRIGHT (C) 1974,1975 BY DIGITAL EQUIPMENT CORPORATION
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326

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45
46      /RTS8 V2 EXEC PARAMETERS - EDITED BY USER
47
48      0001 PDP8E=1
49      0000 PDP12=0
50      0001 EAE=1
51      0001 PWRPAL=1
52      0030 HGHFLD=30
53      0023 NTASKS=23
54      0001 CHECKPT=1
55      0000 PARTNS=0
56
57      / (THE N PARTITIONS ARE NUMBERED FROM 0 TO N-1)
58
59      /COMMON TASK NUMBERS - EDITED BY USER
60      /IT IS ADVISABLE TO DEFINE ALL TASKS HERE, NAMES GIVEN BELOW
61      /ARE USED BY SOME SYSTEM TASKS AND SHOULD BE DELETED FROM THIS
62      /LIST IF THE CORRESPONDING TASK IS NOT INCLUDED IN THE SYSTEM
63
64      0001 CLOCK=1
65      0002 PWRP=2
66      0003 TTY=3
67      0004 LPT=4
68      0005 MCR=5
69      0006 LTA=6
70      0007 DTA=7
71      0021 SWAPPER=21
72      0010 RK0=10
73      0011 RF00=11
74      0012 DF32=12
75      0013 CSA=13
76      0014 CSAF=14
77      0016 ICS=16
78      0017 RX0A=17
79      0023 OS0=NTASKS
80      0020 OS0F=20
81
82      /SOFTWARE PARAMETERS - EDITED BY USER
83
84      0002 OS0FLDS=2
85      0030 OSKBDV=30
86      0031 OSTTDV=31
87      0010 OSSYS0=HK0
88      0004 OSFILL=4
89
90      > IFDEF OS0 <
91      0001 MCRSYS=1
92      >
93      > IFDEF MCR <
94      0000 CLKTFP=0
95      0020 CLKQLN=20
96      DECIMAL
97      0170 HERTZ=120
98      0074 SHERTZ=60
99      OCTAL

```

327

```

100      >
101      > IFDEF SWAPPER <
102      0010 SYS=RK0
103      0000 SUNIT=0
104      >

```

```

105      /EQUIVALENCES:
106
107      7344 AC7776= CLL STA RAL
108      7346 AC7775= CLL STA RTL
109      7330 AC4000= CLA STL RAR
110      7350 AC3777= CLL STA RAR
111      7332 AC2000= CLA STL RTR
112      7326 AC0002= CLA STL RTL
113
114      /MONITOR CALL VALUES:
115
116      4020 CAL= JMS 20 /CALL THE EXECUTIVE
117      5424 POSTOS= JMP I 24 /DISMISS AN INTERRUPT
118      4425 WAITM= JMS I 25 /WAIT FOR MULTIPLE EVENTS
119
120      /NOTE: "*" MEANS CRITICAL VALUE MAY NOT
121      /BE CHANGED WITHOUT MODIFYING SYSTEM CODE!!
122      0000 SEND= 0 /SEND MESSAGE
123      0001 RECEIV= 1 /RECEIVE MESSAGE
124      0002 WAITE= 2 /WAIT FOR EVENT FLAG
125      0003 RUN= 3 /CONTINUE TASK EXECUTION
126      0004 SUSPND= 4 /SUSPEND TASK EXECUTION
127      0005 POST= 5 /POST AN EVENT FLAG
128      0006 SKPINS= 6 /INSERT CODE INTO INTERRUPT SKIP CHAIN
129      0007 OERATL= 7 /INITIATE END=ACTION
130      0010 BLKARG= 10 /BLOCK TASK FOR REASON SPECIFIED IN ARG
131      0011 SENDM= 11 /SEND MESSAGE AND WAIT
132      0012 UNBARG= 12 /UNBLOCK TASK FOR REASON SPECIFIED IN ARG
133      4000 FREE= 4000 /*FREE PARTITION
134
135      IFDEF UDC
136      <AD=0/00=1/01=2/0C=3/EC=4/RC=5
137      DC=6/ECT=7/CS=10/DCT=11/AI=12>
138
139      /TASK STATUS FLAGS:
140      4000 NONRNT= 4000 /*NONRESIDENT TASK WAIT
141      2000 EFWT= 2000 /EVENT FLAG WAIT
142      1000 RUNWT= 1000 /SCHEDULE WAIT
143      0400 SWPWT= 0400 /*SWAPPER WAIT
144      0200 EORMWT= 0200 /EVENT FLAG OR MESSAGE WAIT
145      0100 USERWT= 0100 /USER SPECIFIED WAIT
146      0040 ENABWT= 0040 /ENABLE WAIT
147      0020 MSGWT= 0020 /MESSAGE WAIT
148      0010 NETWT= 0010 /NETWORK WAIT (RESERVED FOR POSSIBLE FUTURE USE)
149      0001 DNEWT= 0001 /*DOES NOT EXIST WAIT

```

329

```

150      /SYSTEM LOCATIONS:
151
152      1176 MSGTBL= 1200+2 /TASK MESSAGE TABLE
153      1244 TSTABL= NTASKS+2*2+MSGTBL=4 /TASK STATE TABLE = HOLDS
154      1367 TFTABL= NTASKS+2*4+TSTABL=1 /TASK LINK,UM,DF,IF,PC,AC,MQ
155      /TASK FLAGS TABLE = HOLDS
156      /TASK STATUS FLAGS
157      IFDEF SWAPPER <
158      1414 RESTBL= TFTABL+NTASKS+2 /RESIDENCY TABLE
159      1420 PARTBL= NTASKS-SWAPPER*2+RESTBL+3&7774 /PARTITION TABLE
160      0043 COMMAND=43 /SWAPPER COMMAND BUFFER
161      >
162
163      0035 TSWFLG= 35 /TASK SW INHIBIT FLAG IN FIELD 0
164      0036 TODL= 36 /LOW ORDER TIME OF DAY IN FIELD 0
165      0037 TODH= 37 /HIGH ORDER TIME OF DAY IN FIELD 0
166      0040 DATE= 40 /DATE IN OS8 FORMAT IN FIELD 0
167      0041 MCREF= 41 /MCR START EVENT FLAG IN FIELD 0
168

```

```

169      /TASK TABLE SETUP = "TASK", "CUR", "ININT", AND "START"
170      /MUST BE DEFINED BY TASK:
171
172      1206      *TASK*2+MSGTBL
173      01206 0000 ZBLOCK 2 /MESSAGE BUFFER INITIALLY CLEAR
174      1264      *TASK*4+TSTABL
175      01264 0011 CURX10+CUR /INITIAL FLAGS
176      01265 4400 START
177      01266 0000 0 /INITIAL AC 0
178      1373      *TASK*TFTABL
179      01373 0000 ININT

```

331

```

180      /LPT DRIVER TASK FOR RTS8 V2
181      /
182      /
183      /
184      /
185      /
186      /
187      /
188      /
189      /
190      /COPYRIGHT (C) 1974,1975 BY DIGITAL EQUIPMENT CORPORATION
191      /
192      /
193      /
194      /
195      /
196      /
197      /
198      /
199      /
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214      /
215      /
216      /
217      /
218      /
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220      /
221      /
222      /
223      /

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```

224 /HANDLES L88, L88E, LV8 LINE PRINTERS,
225 /INPUT MESSAGE FORMAT IS COMPATIBLE WITH THE TELETYPE HANDLER
226
227 /TASK DATA BLOCK:
228 0004 TASK= LPT
229 0010 CUR= 10
230 0000 ININT= 0
231
232 6661 LSF= 6661
233 6662 LCF= 6662
234 6663 LSE= 6663 /ERROR SKIP FOR L88 ONLY
235 6665 LIE= 6665
236 6666 LLS= 6666
237 6667 LIF= 6667 /DISABLE INTERRUPT = L88 ONLY
238
239 0001 FIELD CURX10
240 4400 *4400
241
242 14400 4020 MEVFLG, CAL
243 14401 0006 START, SKPINS
244 14402 4544 FLAGS, LPINT
245 14403 1306 HALF, LPMSLP, TAD ASGNEE /GET ASSIGNEE (IF ANY)
246 14404 4020 CAL
247 14405 0001 RECEIV /TAKE THE MESSAGE OFF THE 0
248 14406 0000 MADOR, 0 /GETS ADDRESS OF MESSAGE
249 14407 3362 DCA MSGCDF /FIELD OF MSG IN AC
250 14410 7346 AC7775
251 14411 1206 TAD MADDR
252 14412 3200 DCA MEVFLG /SAVE MESSAGE EVENT FLAG ADDRESS
253 14413 4361 JMS CDFMSG
254 14414 1606 TAD I MADDR
255 14415 3201 DCA FLAGS /FIRST WORD OF MESSAGE IS FLAGS
256 14416 2206 ISZ MADDR
257 14417 2206 ISZ MADDR /SKIP REPLY WORD
258 14420 1201 TAD FLAGS
259 14421 0377 AND (200)
260 14422 7640 SZA CLA
261 14423 5302 JMP ASSIGN /BIT 200 ON MEANS THIS IS AN ASSIGN CALL
262 14424 1201 TAD FLAGS
263 14425 7006 RTL
264 14426 7700 SNA CLA /BIT 1000 OF FLAG WORD INDICATES
265 14427 5232 JMP ,+3 /IF MESSAGE OR POINTER TO IT FOLLOWS
266 14430 1606 TAD I MADDR
267 14431 3206 DCA MADDR
268 14432 7240 STA
269 14433 3202 DCA HALF /INITIALIZE LEFT/RIGHT SWITCH

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270 /LOOP TO UNPACK AND OUTPUT MESSAGE
271
272 14434 4361 LPOLP, JMS CDFMSG
273 14435 1201 TAD FLAGS
274 14436 7710 SPA CLA /BIT 0 IF FLAG WD TELLS WHETHER
275 14437 5263 JMP ONEPWO /MESSAGE IS PACKED OR UNPACKED ASCII
276 14440 2202 ISZ HALF
277 14441 5251 ISZ RGHTHF
278 14442 7344 AC7776
279 14443 3202 DCA HALF
280 14444 1606 TAD I MADDR
281 14445 7112 CLL RTR
282 14446 7012 RTR
283 14447 7012 RTR
284 14450 5253 JMP ,+3
285 14451 1606 RGHTHF, TAD I MADDR
286 14452 2206 ISZ MADDR
287 14453 0376 AND (77)
288 14454 7450 SNA
289 14455 5267 JMP CKCRLF
290 14456 1375 TAD (240)
291 14457 0376 AND (77)
292 14460 1375 TAD (240)
293 14461 4315 OUTCH, JMS LPOUT
294 14462 5234 JMP LPOLP
295
296 14463 1606 ONEPWO, TAD I MADDR
297 14464 2206 ISZ MADDR
298 14465 7440 SZA
299 14466 5261 JMP OUTCH
300 14467 1201 CKCRLF, TAD FLAGS
301 14470 7004 RAL
302 14471 7700 SNA CLA /BIT 1 OF FLAGS TELLS WHETHER
303 14472 4307 JMS CRLF /TO FOLLOW MESSAGE BY A CR/LF
304 14473 1362 LPOVER, TAD MSGCDF /GET CDF TO MESSAGE FIELD
305 14474 3300 DCA MF
306 14475 1200 TAD MEVFLG
307 14476 4020 CAL
308 14477 0005 POST
309 14500 0000 MF, 0 /POST EVENT FLAG FOR SENDER
310 14501 5203 JMP LPMSLP
311
312 14502 1201 ASSIGN, TAD FLAGS
313 14503 0376 AND (77) /GET TASK TO BE ASSIGNED TO
314 14504 3306 DCA ASGNEE
315 14505 5273 JMP LPOVER /POST ASSIGNMENT EVENT FLAG
316
317 14506 0000 ASGNEE, 0 /TASK ASSIGNMENT = 0 MEANS UNASSIGNED

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318
319 /LOW=LEVEL LPT OUTPUT CODE
320 14507 0000 CRLF, 0
321 14510 1374 TAO (215
322 14511 4315 JMS LPOUT
323 14512 1373 TAO (212
324 14513 4315 JMS LPOUT
325 14514 5707 JMP I CRLF
326
327 14515 0000 LPOUT, 0
328 14516 3361 DCA CDFMSG
329 14517 1360 TAO LPOEV
330 14520 7650 SNA CLA /EVENT FLAG POSTED?
331 14521 5330 JMP LPREDY /YES = SKIP SOME OVERHEAD
332 14522 7201 CLA IAC
333 14523 6665 LIE /ENABLE LINE PRINTER INTERRUPTS
334 14524 7200 CLA /JUST IN CASE
335 14525 0000 CAL
336 14526 0002 WAITE /WAIT FOR LAST CHAR TO FINISH
337 14527 4560 PLPOEV, LPOEV
338 14530 1361 LPREDY, TAO CDFMSG
339 14531 6002 IOF /INHIBIT INTERRUPTS
340 14532 6666 LLS
341 14533 7200 CLA
342 14534 0000 AND I 0 /WASTE SOME TIME
343 14535 2360 ISZ LPOEV
344 14536 6661 LSF
345 14537 5342 JMP ,*3 /TEST FOR IMMEDIATE FLAG
346 14540 6662 LCF
347 14541 3360 DCA LPOEV
348 14542 6001 ION /RESTORE INTERRUPTS
349 14543 5715 JMP I LPOUT /YES = DON'T BOTHER WITH EVENT FLAG
350
351 14544 0000 LPINT, 010 /USED FOR LINKING INTO SKIP CHAIN
352 14545 0000
353 14546 6663 LSE /CHECK FOR LPT POWER LOW
354 14547 7410 SKP /NO
355 14550 6667 LIF /YES = DISABLE INTERRUPTS
356 14551 6661 LSF
357 14552 5744 JMP I LPINT
358 14553 6211 CDF CUR
359 14554 6202 CIF 0
360 14555 6662 LCF
361 14556 1327 TAO PLPOEV
362 14557 5424 POSTDS /POST "LPT COMPLETE" EVENT FLAG
363
364 14560 0000 LPOEV, 0
365
366 14561 0000 CDFMSG, 0
367 14562 7402 MSGCDF, HLT
368 14563 5761 JMP I CDFMSG
369 14573 0212
370 14574 0215
371 14575 0240
372 14576 0077

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373 14577 0200
374 4600 PAGE
375 $$$

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336

AC0002 7326	MCRSYS 0001
AC2000 7332	MEVFLG 4400
AC3777 7350	MF 4500
AC4000 7330	MSGCDF 4562
AC7775 7346	MSGTBL 1176
AC7776 7344	MSGWT 0020
ASGNEE 4506	NETWT 0010
ASSIGN 4502	NONRWT 4000
BLKARG 0010	NTASKS 0023
CAL 4020	ONEPND 4463
CDFMHG 4561	OSFILL 0004
CHECKP 0001	OSFLDS 0002
CKCRLF 4467	OSKBDV 0030
CLKQLN 0020	OSSYSD 0010
CLKTYP 0000	OSTTDV 0031
CLOCK 0001	OSB 0023
COMMAN 0043	OSBF 0020
CRLF 4507	OUTCH 4461
CSA 0013	PARTBL 1420
CSAF 0014	PARTNS 0000
CUR 0010	PDP12 0000
DATE 0040	PDP8E 0001
DERAIL 0007	PLPOEV 4527
DF32 0012	POST 0005
DNEWT 0001	POSTDS 5424
DTA 0007	PWRF 0002
EAE 0001	PWRFAL 0001
EFWT 2000	RECEIV 0001
ENABWT 0040	RESTBL 1414
EORMWT 0200	RF08 0011
FLAGS 4401	RGHTHF 4451
FREE 4000	RK8 0010
HALF 4402	RUN 0003
HERTZ 0170	RUNWT 1000
HGHFLD 0030	RX8A 0017
ICS 0016	SEND 0000
INIWT 0000	SENDW 0011
LCF 6662	SHERTZ 0074
LIE 6665	SKPINS 0006
LIF 6667	START 4400
LLS 6666	SUNIT 0000
LPINT 4544	SUSPND 0004
LPMSLP 4403	SWAPPE 0021
LPOEV 4560	SWPWT 0400
LPLP 4434	SYS 0010
LPOUT 4515	TASK 0004
LPOVER 4473	TFTABL 1367
LPREDY 4530	TODH 0037
LPT 0004	TOUL 0036
LSE 6663	TSTABL 1244
LSF 6661	TSHFLG 0035
LTA 0006	TTY 0003
MADOR 4406	UNBARG 0012
MCR 0005	USERWT 0100
MCREP 0041	WAITE 0002

WAITH 4425

337

ERRORS DETECTED: 0
LINKS GENERATED: 0

AC0002	112#								
AC2000	111#								
AC3777	110#								
AC4000	109#								
AC7775	108#	250							
AC7776	107#	270							
AD	135#								
ASGNEE	245	314	317#						
ASSIGN	261	312#							
BLKARG	130#								
CAL	116#	242	246	307	335				
CDFM3G	253	272	320	330	366#	360			
CHECKP	54#								
CKCRLF	289	300#							
CLKQLN	95#								
CLKTYP	94#								
CLOCK	63#	93							
COMMAN	160#								
CRLF	303	320#	325						
CS	138#								
CSA	74#								
CSAF	75#								
CT	136#								
CUR	175	175	229#	239	350				
DATE	166#								
DERAIL	129#								
DF32	73#								
DNEW	149#								
DTA	69#								
EAE	50#								
EFMT	141#								
ENABWT	146#								
EORMWT	144#								
FLAGS	243#	255	250	262	273	300	312		
FREE	133#								
HALF	244#	269	276	279					
HERTZ	97#								
HGMFLD	52#								
ICS	76#								
INIWT	179	230#							
LCF	233#	346	360						
LIE	235#	333							
LIF	237#	355							
LLS	236#	340							
LPINT	244	351#	357						
LPMSLP	245#	310							
LPOEV	329	337	343	347	364#				
LPOLP	272#	294							
LPOUT	293	322	324	327#	349				
LPOVER	304#	315							
LPREDY	331	330#							
LPT	66#	220							
LSE	234#	353							
LSF	232#	344	356						
LTA	68#								
MAADR	248#	251	254	256	257	266	267	280	285
	296	297							
MCR	67#	90							
MCREP	167#								

339

MCRSYS	91#								
MEVFLG	241#	252	306						
MF	305	309#							
MSGCDF	249	304	367#						
MSGTBL	152#	153	172						
MSGWT	147#								
NETWT	148#								
NTASKS	53#	78	153	155	150	159			
ONEPND	275	296#							
OSFILL	80#								
OSFLOS	84#								
OSKBDV	85#								
OSSYSD	87#								
OSTTDV	86#								
OS8	78#	83							
OS8F	79#								
OUTCH	293#	299							
PARTBL	159#								
PARTNS	55#								
PDP12	49#								
PDP8E	48#								
PLPOEV	337#	361							
POST	127#	300							
POSTDS	117#	362							
PWRP	64#								
PWRFAL	51#								
RECEIV	123#	247							
RESTBL	150#	159							
RF08	72#								
RGHTMF	277	285#							
RK8	71#	87	102						
RUN	125#								
RUNWT	142#								
RX8A	77#								
SEND	122#								
SENDW	131#								
SHERTZ	90#								
SKPINS	128#	243							
START	176	242#							
SUNIT	103#								
SUSPND	126#								
SWAPPE	70#	101	157	159					
SWPWT	143#								
SYS	102#								
TASK	172	174	170	220#					
TFTABL	155#	150	170						
TOOH	165#								
TOOL	164#								
TSTABL	153#	155	174						
TSHFLG	163#								
TTY	65#								
UDC	135								
UNBARG	132#								
USFRWT	145#								
WAITE	124#	336							
WAITM	118#								
14573	323								
14574	321								
14575	290	292							
14576	287	291	313						

340

341

/PARAMETERS FOR RTS-8 TASKS (VERSION PAL8-V9D 09/11/75 PAGE 1

1 /PARAMETERS FOR RTS-8 TASKS (VERSION 2)

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342

```

45
46      /RTS8 V2 EXEC PARAMETERS = EDITED BY USER
47
48      0001 PDP8E=1
49      0004 PDP12=0
50      0001 EAE=1
51      0001 PWRFL=1
52      0030 HGHFLD=30
53      0023 NTASKS=23
54      0001 CHECKPT=1
55      0000 PARTNS=0
56
57      / (THE N PARTITIONS ARE NUMBERED FROM 0 TO N-1)
58
59      /COMMON TASK NUMBERS = EDITED BY USER
60      /IT IS ADVISABLE TO DEFINE ALL TASKS HERE, NAMES GIVEN BELOW
61      /ARE USED BY SOME SYSTEM TASKS AND SHOULD BE DELETED FROM THIS
62      /LIST IF THE CORRESPONDING TASK IS NOT INCLUDED IN THE SYSTEM
63
64      0001 CLOCK=1
65      0002 PWRFL=2
66      0003 TTY=3
67      0004 LPT=4
68      0005 MCR=5
69      0006 LTA=6
70      0007 DTA=7
71      0021 SWAPPER=21
72      0010 RK8=10
73      0011 RF08=11
74      0012 DF32=12
75      0013 CSA=13
76      0014 CSAF=14
77      0016 ICS=16
78      0017 RX8A=17
79      0023 OS8=NTASKS
80      0020 OS8F=20
81
82      /SOFTWARE PARAMETERS = EDITED BY USER
83
84      0002 OSFLDS=2
85      0030 OSK8OV=30
86      0031 OSTT0V=31
87      0010 OSSYSD=RK8
88      0004 OSFILL=4
89
90      >
91      0001 MCRSYS=1
92      >
93      IFDEF CLOCK <
94      0000 CLKTYP=0
95      0020 CLKQLN=20
96      DECIMAL
97      0170 HERTZ=120
98      0074 SHERTZ=60
99      OCTAL

```

343

```

100      >
101      IFDEF SWAPPER <
102      0010 SYS=RK8
103      0000 SUNIT=0
104      >

```

344

```

105      /EQUIVALENCES:
106
107      7344 AC7776= CLL STA RAL
108      7346 AC7775= CLL STA RTL
109      7330 AC4000= CLA STL RAR
110      7350 AC3777= CLL STA RAR
111      7332 AC2000= CLA STL RTR
112      7326 AC0002= CLA STL RTL
113
114      /MONITOR CALL VALUES:
115
116      4020 CAL= JMS 20 /CALL THE EXECUTIVE
117      5424 POSTDS= JMP I 24 /DISMISS AN INTERRUPT
118      4425 WAIT= JMS I 25 /WAIT FOR MULTIPLE EVENTS
119
120      /NOTE: "*" MEANS CRITICAL VALUE MAY NOT
121      /BE CHANGED WITHOUT MODIFYING SYSTEM CODE!!
122      0000 SEND= 0 /SEND MESSAGE
123      0001 RECEIV= 1 /RECEIVE MESSAGE
124      0002 WAITE= 2 /WAIT FOR EVENT FLAG
125      0003 RUN= 3 /CONTINUE TASK EXECUTION
126      0004 SUSPND= 4 /SUSPEND TASK EXECUTION
127      0005 POST= 5 /POST AN EVENT FLAG
128      0006 SKPINS= 6 /INSERT CODE INTO INTERRUPT SKIP CHAIN
129      0007 DERAIL= 7 /INITIATE END-ACTION
130      0010 BLKARG= 10 /BLOCK TASK FOR REASON SPECIFIED IN ARG
131      0011 SENDM= 11 /SEND MESSAGE AND WAIT
132      0012 UNBARG= 12 /UNBLOCK TASK FOR REASON SPECIFIED IN ARG
133      4000 FREE= 4000 /**FREE PARTITION
134
135      IFDEF UDC <AO=0/DO=1/DI=2/GC=3/EC=4/RC=5
136      DC=6/ECT=7/CS=10/DCI=11/AI=12>
137
138      /TASK STATUS FLAGS:
139
140      4000 NONRWT= 4000 /**NONRESIDENT TASK WAIT
141      2000 EFWT= 2000 /EVENT FLAG WAIT
142      1000 RUNWT= 1000 /SCHEDULE WAIT
143      0400 SWPWT= 0400 /**SWAPPER WAIT
144      0200 EORMWT= 0200 /EVENT FLAG OR MESSAGE WAIT
145      0100 USERWT= 0100 /USER SPECIFIED WAIT
146      0040 ENABWT= 0040 /ENABLE WAIT
147      0020 MSGWT= 0020 /MESSAGE WAIT
148      0010 NETWT= 0010 /NETWORK WAIT (RESERVED FOR POSSIBLE FUTURE USE)
149      0001 DNEWT= 0001 /**DOES NOT EXIST WAIT

```

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150      /SYSTEM LOCATIONS:
151
152      1176 MSGTBL= 1200-2 /TASK MESSAGE TABLE
153      1244 TSTABL= NTASKS*2+MSGTBL-4 /TASK STATE TABLE - HOLDS
154      1367 TFTABL= NTASKS*2+TSTABL-1 /TASK LINK,UM,DF,IF,PC,AC,MQ
155      /TASK FLAGS TABLE - HOLDS
156      /TASK STATUS FLAGS
157
158      IFDEF SWAPPER <
159      1414 RESTBL= TFTABL+NTASKS*2 /RESIDENCY TABLE
160      1420 PARTBL= NTASKS-SWAPPER*2+RESTBL+3&7774 /PARTITION TABLE
161      0043 COMMAND=43 /SWAPPER COMMAND BUFFER
162
163      0035 TSWFLG= 35 /TASK SW INHIBIT FLAG IN FIELD 0
164      0036 TODL= 36 /LOW ORDER TIME OF DAY IN FIELD 0
165      0037 TODH= 37 /HIGH ORDER TIME OF DAY IN FIELD 0
166      0040 DATE= 40 /DATE IN OS8 FORMAT IN FIELD 0
167      0041 MCREP= 41 /MCR START EVENT FLAG IN FIELD 0
168

```

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169      /TASK TABLE SETUP = "TASK", "CUR", "INIWT", AND "START"
170      /MUST BE DEFINED BY TASK:
171
172      1234      *TASK*2*MSGTBL
173      01234 0000 ZBLOCK 2 /MESSAGE BUFFER INITIALLY CLEAR
174      1340      *TASK*4*TSSTABL
175      01340 0011 CURX10*CUR /INITIAL FLAGS
176      01341 3200 START
177      01342 0000 0 /INITIAL AC 0
178      1400      *TASK*TFSTABL
179      01400 0000 INIWT

```

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```

180      /2 FLOPPY DISK HANDLER FOR RTS=8
181      /
182      /
183      /
184      /
185      /
186      /
187      /
188      /
189      /
190      /COPYRIGHT (C) 1975 BY DIGITAL EQUIPMENT CORPORATION
191      /
192      /
193      /
194      /
195      /
196      /
197      /
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213      /DIGITAL.
214      /
215      /
216      /
217      /
218      /
219      /
220      /
221      /
222      /
223      /

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224      /1      RTS-8 RX01 HANDLER
225
226      0017      TASK=RX0A      /MAY BE EDITED TO 'RX0B', 'RX0C', OR 'RX0D' .
227      0000      ININT=0
228      0010      CUR=10
229
230      3200      LOC=3200      /LOAD ADDRESS
231
232      IFNDEF RXDYCD <RXDYCD=750>      /DEVICE CODE OF FLOPPY CONTROLLER
233
234      /      SR
235
236      /      MESSAGE FORMAT:
237
238      /RXMSG, ZBLOCK 3
239      /      CODE=DEL+MODE+UNIT
240      /      RW+PAGES+FIELD
241      /      BUFA00
242      /      BLOKNO
243      /      STATUS
244
245      /MODE= 0      TRANSFER IN 12-BIT MODE
246      /      100      TRANSFER IN 8-BIT MODE
247
248      /CODE= 0      IGNORE DEL AND USE PAGES & BLOKNO IN OS/8 SENSE
249      /      4000      SPECIAL PHYSICAL SECTOR ACTION, IGNORE PAGES AND
250      /      ASSUME BLOKNO HAS FORM TTTT7TTT8888
251      /      SPECIFYING ABSOLUTE PHYSICAL TRACK AND SECTOR NUMBER
252
253      /DEL= 0      DON'T CONSIDER DELETED DATA MARKS
254      /      2000      HANDLE DELE/GENERAL INFORMATION
255
256      /THERE ARE 128 BYTES PER SECTOR,
257      /26 SECTORS PER TRACK NUMBER 1-26 DECIMAL (1-32 OCTAL)
258      /77 TRACKS PER FLOPPY NUMBERED 0-76 DECIMAL (0-114 OCTAL)
259
260      /IN 12-BIT MODE, THERE ARE 64 WORDS PER SECTOR (4 SECTORS PER OS/8 BLOCK)
261      /IN 8-BIT MODE, THERE ARE 128 BYTES PER SECTOR (2 SECTORS PER OS/8 BLOCK)
262
263
264      /STANDARD RTS-8, OS/8 INTERLEAVE SCHEME ON FLOPPY IS AS FOLLOWS:
265
266      / OS/8 LOGICAL PHYSICAL PHYSICAL
267      / BLK REC # TRACK # SECTORS
268
269      /0      0-3      1      1,3,5,7
270      /1      4-7      1      9,11,13,15
271      /2      8-11     1      17,19,21,23
272      /3      12-15    1      25,2,4,6
273      /4      16-19    1      8,10,12,14
274      /5      20-23    1      16,18,20,22
275      /6      24-27    1/2    24,26/1,3
276      /7      28-31    2      5,7,9,11
277      /8      32-35    2      13,15,17,19
278      /9      36-39    2      21,23,25,2

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279      /10     40-43    2      4,6,8,10
280      /11     44-47    2      12,14,16,18
281      /12     48-51    2      20,22,24,26
282      /13     52-55    3      1,3,5,7
283      /...     ...
284
285      /ALGORITHM TO CONVERT OS/8 BLOCK NUMBER TO PHYSICAL TRACK AND SECTOR #S:
286
287      /1,      MULTIPLY OS/8 BLOCK NUMBER, B, BY 4 TO GET INITIAL LOGICAL
288      /      RECORD NUMBER, (NEXT 3 LOGICAL RECORD NUMBERS ARE SEQUENTIAL,)
289
290      /2,      DIVIDE LOGICAL RECORD NUMBER BY 13 TO GET QUOTIENT Q
291      /      AND REMAINDER R,
292
293      /3,      DIVIDE QUOTIENT Q BY 2 TO GET NEW QUOTIENT T AND NEW REMAINDER S,
294
295      /4,      PHYSICAL TRACK NUMBER IS 1+T,
296
297      /5,      PHYSICAL SECTOR NUMBER IS 1+2+R+S,

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298 /FORMAT OF RX8E COMMAND REGISTER:
299 /BITS 0-3 UNUSED
300 /BIT 4 MAINTENANCE
301 /BIT 5 MODE BIT (1 MEANS 8-BIT MODE, 0 MEANS 12-BIT MODE)
302 /BIT 6 UNUSED
303 /BIT 7 DRIVE
304 /BITS 8-10 FUNCTION
305 / 000 FILL BUFFER
306 / 001 EMPTY BUFFER
307 / 010 WRITE SECTOR
308 / 011 READ SECTOR
309 / 100 UNUSED
310 / 101 READ STATUS
311 / 110 WRITE DELETED DATA SECTOR
312 / 111 MAINTENANCE
313 /BIT 11 UNUSED
314
315 /FORMAT OF RX8E STATUS WORD:
316
317 /BITS 0-3 UNUSED
318 /BIT 4 SELECTED DRIVE READY
319 /BIT 5 DELETED DATA INDICATION
320 /BITS 6-7 UNUSED
321 /BIT 8 UNUSED BUT RESERVED FOR FUTURE USE
322 /BIT 9 INIT DONE
323 /BIT 10 PARITY ERROR
324 /BIT 11 CRC ERROR
325
326 /A FLOPPY CONTAINS 3722(8)=2002(10) SECTORS.
327 /SINCE 26(10)=32(8) ARE NOT USED BY OS/8,
328 /THE HIGHEST LOGICAL RECORD # IS 1975(10)=3667(8).
329 /THUS THE LARGEST OS/8 BLOCK NUMBER IS 493(10)=755(8).
330 /IN OTHER WORDS, A FLOPPY CONTAINS 494(10) OS/8 BLOCKS OF DATA,

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331 6751 LCD= 6001+RXDVCD /LOAD COMMAND REGISTER
332 6752 XDR= 6002+RXDVCD /TRANSFER DATA REGISTER
333 6753 STR= 6003+RXDVCD /SKIP ON TRANSFER REQUEST FLAG, CLEAR FLAG
334 6754 SER= 6004+RXDVCD /SKIP ON ERROR FLAG, CLEAR FLAG
335 6755 SDN= 6005+RXDVCD /SKIP ON DONE FLAG, CLEAR FLAG
336 6756 INTR= 6006+RXDVCD /INTERRUPT ENABLE/DISABLE
337 6757 INIT= 6007+RXDVCD /INITIALIZE CONTROLLER AND RECALIBRATE DRIVES
338
339 0001 FIELD CURX10
340 3200 *LOC
341
342 BUFFER, /BUFFER ADDRESS
343 13200 4020 START, CAL /INSERT INTERRUPT SKIP IN SKIP CHAIN
344 13201 0006 DFLAG, SKPINS / <0 WAITING, =0 FINISHED, >0 PENDING
345 /FLOPPY IS INITIALLY BUSY
346 13202 3405 CMD, INTRPT
347 13203 7201 REC, CLA IAC
348 13204 6756 WC, INTR /ENABLE INTERRUPTS
349 13205 7200 STATUS, CLA
350 13206 4020 LOOP, CAL
351 13207 0001 RECEIV
352 13210 0000 MADDR, 0 /GET A MESSAGE
353 13211 3341 DCA MSGFLD /ADDRESS OF MESSAGE LEFT HERE
354 13212 7240 STA /CDF TO FIELD OF MESSAGE LEFT IN AC
355 13213 1210 TAD MADDR
356 13214 3210 DCA MADDR /RESET MADDR TO POINT BACK TO PARAM BLOCK =1
357 13215 4340 JMS GET /GET UNIT AND SPECIAL FUNCTIONS BIT
358 13216 3345 DCA FNCTN
359 13217 4340 JMS GET /GET FUNCTION WORD
360 13220 3361 DCA FN
361 13221 4340 JMS GET /GET BUFFER ADDRESS
362 13222 3200 DCA BUFFER
363 13223 4340 JMS GET /GET BLOCK NUMBER
364 13224 3346 DCA BLOCK
365 13225 6211 CDF CUR
366 13226 1346 TAD BLOCK
367 13227 7106 CLL RTL
368 13230 3203 DCA REC /FIRST LOGICAL RECORD IS 4* OS/8 RECORD
369 13231 1361 TAD FN
370 13232 0377 AND (70 /ISOLATE FIELD OF BUFFER
371 13233 1376 TAD (CDF
372 13234 3304 DCA BUFCDF /STORE AWAY IN=LINE
373 13235 1361 TAD FN
374 13236 7004 RAL /MOVE # OF PAGES INTO AC 0=4
375 13237 0325 AND L7600 /TURN PAGE COUNT INTO WORD COUNT
376 13240 7041 CIA
377 13241 3204 DCA WC /STORE NEGATIVE OF WORD COUNT
378 13242 1345 TAD FNCTN
379 13243 0375 AND (100
380 13244 1374 TAD (100-1
381 13245 3352 DCA MSK
382 13246 1345 TAD FNCTN
383 13247 7700 SMA CLA /LOOK AT CODE BIT
384 13250 5265 JMP NOSPEC /NOTHING SPECIAL
385 13251 1352 TAD MSK

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386 13252 7040 CMA
387 13253 3204 DCA WC /STORE REVISED NEGATIVE OF WORD COUNT
388 13254 1346 TAD BLOCK
389 13255 0312 AND L37
390 13256 3773 DCA I (SECTOR
391 13257 1346 TAD BLOCK
392 13260 7012 RTR
393 13261 7012 RTR
394 13262 7010 RAR
395 13263 0372 AND (177
396 13264 3771 OCA I (TRACK
397 13265 1361 NOSPEC, TAD FN /GET RW BIT
398 13266 7710 SPA CLA /IF IT'S A READ, WE MUST PRE-READ
399 13267 5300 JMP STWRIT /OTHERWISE, START FILLING RX01 BUFFER
400 13270 1204 WOROLP, TAD WC /GET WORD COUNT
401 13271 0392 AND MSK /CHECK FOR MULTIPLE OF 64 (OR 128) WORDS
402 13272 7600 STA CLA /AT SUCH A BOUNDARY, WE WANT TO DO I/O
403 13273 5304 JMP BUFCDF /OTHERWISE, JUST TRANSFER BETWEEN BUFFERS
404 13274 4770 JMS I (DISKID /READ OR WRITE A BUFFER
405 13275 2203 ISZ REC /BUMP RECORD NUMBER
406 13276 1767 TAD I (STATE
407 13277 3205 DCA STATUS
408 13300 1361 STWRIT, TAD FN
409 13301 7004 RAL /RW BIT TO LINK
410 13302 7226 CLA CML RTL /AC=2 IF READ, 0 IF WRITE
411 13303 4347 JMS LOCH0 /AC=0 ==> FILL SECTOR BUFFER
412 /AC=2 ==> EMPTY SECTOR BUFFER
413 13304 7402 BUFCDF, HLT /FIRST TIME THROUGH, DO CDF TO FIELD OF BUFFER
414 13305 1600 TRANWO, TAD I BUFFER /GET CONTENTS OF BUFFER IN CASE WRITING
415 13306 4766 JMS I (TRANS /TRANSFER A WORD BETWEEN CORE AND RX01 BUFFER
416 13307 3600 DCA I BUFFER /STORE CONTENTS OF BUFFER IN CASE READING
417 13310 6211 CDF CUR
418 13311 2200 ISZ BUFFER /BUMP BUFFER POINTER
419 13312 0037 L37, 37 /IN CASE IT SKIPS
420 13313 2204 ISZ WC /BUMP WORD COUNT
421 13314 5270 JMP WORDLP /REITERATE
422 13315 1361 TAD FN /LOOK AT RW BIT AGAIN
423 13316 7710 SPA CLA
424 13317 4770 JMS I (DISKID /IF WRITING, DUMP LAST RECORD,
425 13320 1345 TAD FNCTN
426 13321 7044 CMA RAL
427 13322 7730 SZL SPA CLA /RETURN STATUS IF CODE=1 AND DEL=1
428 13323 3205 RETRN, DCA STATUS /OTHERWISE ZERO STATUS
429 13324 4340 JMS GET
430 13325 7600 L7600, 7600 /CLA
431 13326 1205 TAD STATUS
432 13327 3610 OCA I MAODR
433 13330 1341 TAD MSGFLD
434 13331 3336 DCA EFCDF
435 13332 1210 TAD MAODR
436 13333 1365 TAD (-7 /POINT TO MESSAGE EVENT FLAG
437 13334 4020 CAL
438 13335 0005 POST /POST EVENT FLAG POINTED TO BY AC
439 13336 7402 EFCDF, HLT /FIELD OF EVENT FLAG
440 13337 5206 JMP LOOP /GET ANOTHER MESSAGE

```

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441
442 13340 0000 GET, 0 /CHANGE DF TO FIELD OF MSG; GET NEXT ENTRY
443 13341 7402 MSGFLD, HLT
444 13342 2210 ISZ MAODR
445 13343 1610 TAD I MAODR
446 13344 5740 JMP I GET
447 13345 0000 FNCTN, 0 /CODE+DEL+MODE+UNIT
448 13346 0000 BLOCK, 0 /BLOCK NUMBER

```

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449 13347 0000 LOCHD, 0      /WAIT FOR DONE FLAG AND LOAD COMMAND REGISTER
450 13350 3202      DCA CMD  /SAVE COMMAND
451 13351 4764      JMS I (DWAIT /WAIT FOR DONE FLAG
452 13352 0077 MSK, 77      /77 IF 12-BIT MODE/ 177 IF 8-BIT MODE
453                                     /WE DON'T CARE IF PREVIOUS OPERATION HAD AN ERROR
454                                     /BECAUSE WE ARE NOW INITIATING A NEW OPERATION,
455 13353 1202      TAD CMD
456 13354 6002      IOF
457 13355 6751      LCD      /LOAD NEW COMMAND REGISTER CONTENTS
458 13356 2201      ISZ DFLAG
459 13357 6001      ION
460 13360 3747      JMP I LOCHD
461
462 13361 0000 FN, 0      /RW+PAGES+FIELD
463 13364 3545
464 13365 7771
465 13366 3400
466 13367 3544
467 13370 3420
468 13371 3540
469 13372 0177
470 13373 3541
471 13374 0077
472 13375 0100
473 13376 6201
474 13377 0070
475      3400

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PAGE

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476 13400 0000 TRANS, 0
477 13401 6753      STR
478 13402 5201      JMP ,+1
479 13403 6752      XOR
480 13404 5600      JMP I TRANS

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481 13405 0000 INTRPT, ZBLOCK 2 /RTS OVERHEAD
482 13407 6755 SON /SKIP ON DONE AND CLEAR FLAG
483 13410 5605 JMP I INTRPT /IT AINT THIS FLAG
484 13411 6211 COF CUR
485 13412 6752 XOR /READ STATUS
486 13413 0377 AND (377 /12-BIT MODE LEAVES GARBAGE IN AC 0=3
487 13414 3344 DCA STATE
488 13415 1376 TAO (DFLAG
489 13416 6202 CIF 0
490 13417 5424 POSTOS
491
492 13420 0000 DISKIO, 0 /READ OR WRITE RECORD
493 13421 1375 TAO (=10
494 13422 3334 DCA TRYCNT /RETRY 8 TIMES
495 13423 1774 TRYAGN, TAO I (FNCTN
496 13424 0373 AND (100
497 13425 3342 DCA MODBIT
498 13426 1772 TAO I (FN
499 13427 7004 RAL /RW BIT TO LINK
500 13430 7226 CLA CML RTL
501 13431 1371 TAO (4
502 13432 3343 DCA FNBITS
503 13433 1774 TAO I (FNCTN
504 13434 7044 CMA RAL
505 13435 7720 SMA SNL CLA
506 13436 1772 TAO I (FN
507 13437 7700 SMA CLA
508 13440 5243 JMP T2
509 13441 1370 TAO (14 /DOING A WRITE IN SPECIAL MODE WITH DEL SET
510 13442 3343 DCA FNBITS
511 13443 1774 T2, TAO I (FNCTN
512 13444 7010 RAR /UNIT TO LINK
513 13445 7206 CLA RTL
514 13446 7006 RTL
515 13447 7004 RAL /UNIT TO BIT 7
516 13450 1343 TAO FNBITS
517 13451 4767 JMS I (LDCMO
518 13452 1774 TAO I (FNCTN
519 13453 7710 SPA CLA
520 13454 5310 JMP SPECL /ALREADY HAVE SECTOR AND TRACK
521
522 /ROUTINE TO DIVIDE N BY 13 GIVING QUOTIENT Q AND REMAINDER IN N.
523 13455 1766 TAO I (REC
524 13456 3335 DCA N
525 13457 1365 TAO (200=15
526 13460 3336 DCA D
527 13461 3337 DCA Q
528 13462 1336 DLOOP, TAO 0
529 13463 7141 CLL CIA
530 13464 1335 TAO N
531 13465 7420 SNL
532 13466 7610 SKP CLA
533 13467 3335 DCA N
534 13470 1337 TAO Q
535 13471 7004 RAL

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536 13472 3337 DCA Q
537 13473 1336 TAO 0
538 13474 7110 CLL RAR
539 13475 3336 DCA D
540 13476 7420 SNL /13 EVENTUALLY TRIES TO SHIFT INTO LINK
541 13477 5262 JMP DLOOP
542 / FINAL REMAINDER IS NOW IN N
543 13500 1337 TAO Q
544 13501 7110 CLL RAR /QUOTIENT IS NEW TRACK-1
545 13502 7001 IAC /SINCE WE'RE OFFSETTING EVERYTHING UP ONE TRACK
546 13503 3340 DCA TRACK /SO THAT WE DON'T TOUCH PHYSICAL TRACK 0
547 13504 1335 TAO N /LINK IS NOW TO BE ADDED TO 2^N
548 13505 7004 RAL
549 13506 7001 IAC /SECTORS BEGIN COUNTING AT 1
550 13507 3341 DCA SECTOR
551 /DONE COULD COME UP DURING FOLLOWING CODE
552 13510 1341 SPECL, TAO SECTOR
553 13511 4200 JMS TRANS
554 13512 7200 CLA
555 13513 1340 TAO TRACK
556 13514 4200 JMS TRANS
557 13515 7200 CLA
558 13516 4345 JMS DWAIT /WAIT FOR DONE
559 13517 7410 SKP /ANY ERRORS?
560 13520 5620 JMP I DISKIO /NONE
561 13521 6002 IOF
562 13522 6757 INIT
563 13523 2776 ISZ I (DFLAG
564 13524 7201 CLA IAC
565 13525 6756 INTR /INIT DISABLES INTERRUPTS
566 13526 6001 ION
567 13527 2334 ISZ TRYCNT
568 13530 5223 JMP TRYAGN
569 13531 7330 ERR, STL CLA RAR /JAM ON AC BIT 0 MEANING 'HARD ERROR'
570 13532 1344 TAO STATE
571 13533 5764 JMP I (RETRN

```

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572 13534 7778 TRYCNT, -10
573 13535 0000 N, 0
574 13536 0000 D, 0
575 13537 0000 Q, 0
576 13540 0000 TRACK, 0
577 13541 0000 SECTOR, 0
578 13542 0000 MODBIT, 0
579 13543 0000 FNBITS, 0
580 13544 0000 STATE, 0
581
582 13545 0000 DWAIT, 0
583 13546 4020 CAL
584 13547 0002 WAITE
585 13550 3201 DFLAG
586 13551 1371 TAD (4
587 13552 6754 SER
588 13553 0344 AND STATE
589 13554 7630 SNA CLA
590 13555 2345 ISZ DWAIT
591 13556 3745 JMP I DWAIT
592 13564 3323
593 13565 3200
594 13566 3203
595 13567 3347
596 13570 0014
597 13571 0004
598 13572 3361
599 13573 0100
600 13574 3345
601 13575 7770
602 13576 3201
603 13577 0377
604

```

```

/8IT 9 IS THE 'INIT DONE' BIT
/8ONE COULD COME UP AFTER A POWER FAIL
/80 ERROR FLAG OR INIT STATUS IS AN ERROR
/8SKIP RETURN IF NO ERRORS AND NO INIT DONE

```

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```

AC0002 7326 L7000 3325 SUSPND 0004
AC2000 7332 MAUDR 3210 SWAPPE 0021
AC3777 7350 MCR 0005 SWPMT 0400
AC4000 7330 MCREP 0041 SYS 0010
AC7775 7346 MCRSYS 0001 TASK 0017
AC7776 7344 MODBIT 3542 TFTABL 1367
BLKARG 0010 MSGFLD 3341 TODH 0037
BLOCK 3346 MSGTBL 1176 TOOL 0036
BUFCDF 3304 MSGWT 0020 TRACK 3540
BUFFER 3200 MSK 3352 TRANS 3400
CAL 4020 N 3535 TRANWD 3305
CHECKP 0001 NETWT 0010 TRYAGN 3423
CLKQLN 0020 NONRWT 4000 TRYCNT 3534
CLKTYP 0000 NOSPEC 3265 TSTABL 1244
CLOCK 0001 NTASKS 0023 TSWFLG 0035
CMD 3202 OSFILL 0004 TTY 0003
COMMAN 0043 OSFLDS 0002 T2 3443
CSA 0013 OSKODV 0030 UNBARG 0012
CSAF 0014 OSSYSD 0010 USERWT 0100
CUR 0010 OSTOV 0031 WAITE 0002
D 3536 OSW 0023 WAITM 4425
DATE 0040 OSWF 0020 WC 3204
DERAIL 0007 PARTBL 1420 WORDLP 3270
DFLAG 3201 PARTNS 0000 XDR 6752
DF32 0012 PDP12 0000
DISKIO 3420 PDP8E 0001
DLOOP 3462 POST 0005
DNEWT 0001 POSTDS 3424
DTA 0007 PWRP 0002
DWAIT 3545 PWRFAL 0001
EAE 0001 Q 3537
EPCDF 3336 REC 3203
EPWT 2000 RECEIV 0001
ENABWT 0040 RESTBL 1414
EORHWT 0200 RETRN 3323
ERR 3531 RF00 0011
FN 3361 RK0 0010
FNBITS 3543 RUN 0003
FNCTN 3345 KUNWT 1000
FREE 4000 RXUVCO 0750
GET 3340 RX0A 0017
HERTZ 0170 SDN 6755
HGFLO 0030 SECTOR 3541
ICS 0016 SEND 0000
INIT 6757 SENDW 0011
INIWT 0000 SEH 6754
INTK 6756 SHERTZ 0074
INTRPT 3405 SKPINS 0006
LCD 6751 SPECI 3510
LDCMD 3347 START 3200
LOC 3200 STATE 3504
LOOP 3206 STATUS 3205
LPT 0004 STR 6753
LTA 0006 STWRIT 3300
L37 3312 SUMIT 0000

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ERRORS DETECTED: 0
LINKS GENERATED: 0

361

AC0002	112#						
AC2000	111#						
AC3777	110#						
AC4000	109#						
AC7775	108#						
AC7776	107#						
AD	135#						
BLKARG	130#						
BLOCK	364	366	388	391	440#		
BUFCDF	372	403	413#				
BUFFER	342#	362	414	416	418		
CAL	116#	343	350	437	503		
CHECKP	54#						
CLKQLN	95#						
CLKTYP	94#						
CLOCK	63#	93					
CMD	346#	450	455				
COMMAN	160#						
CS	138#						
CSA	74#						
CSAF	75#						
CT	136#						
CUR	175	175	228#	339	365	417	484
D	526	528	537	539	574#		
DATE	166#						
DERAIL	129#						
DFLAG	344#	458	488	563	585		
DF32	73#						
DISKIO	484	424	492#	560			
DLOOP	528#	541					
DNEW	149#						
DTA	69#						
DWAIT	451	558	582#	590	591		
EAE	50#						
EFCDF	434	439#					
EFWT	141#						
ENABWT	146#						
EORHWT	144#						
ERR	569#						
FN	360	369	373	397	408	422	462# 498 506
FNBITS	502	510	516	579#			
FNCN	358	378	382	425	447#	495	503 511 518
FREE	133#						
GET	357	359	361	363	429	442#	446
HERTZ	97#						
HGMFLD	52#						
ICS	76#						
INIT	337#	562					
INIWT	179	227#					
INTR	336#	348	565				
INTRPT	346	481#	483				
LCD	331#	457					
LOCMO	411	449#	460	517			
LOC	230#	340					
LOOP	350#	440					
LPT	66#						
LTA	68#						
L37	389	419#					
L7600	375	430#					

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MADDR	352#	355	356	432	435	444	445
MCR	67#	90					
MCREP	167#						
MCRSYS	91#						
MODBIT	497	578#					
MSGFLD	353	433	443#				
MSGTOL	152#	153	172				
MSGWT	147#						
MSK	381	385	401	452#			
N	524	530	533	547	573#		
NETWT	148#						
NOSPEC	384	397#					
NTASKS	53#	78	153	155	158	159	
OSFILL	88#						
OSFLDS	8#						
OSKBDV	85#						
OSSTSD	87#						
OSTTGV	86#						
OSB	76#	83					
OSBF	79#						
PARTBL	159#						
PARTNS	55#						
PDP12	49#						
PDP8E	48#						
POST	127#	438					
POSTDS	117#	490					
PWRP	64#						
PWRPAL	51#						
Q	527	534	536	543	575#		
REC	347#	360	405	523			
RECEIV	123#	351					
RESTRBL	158#	159					
RETRN	428#	571					
RF08	72#						
RK8	71#	87	102				
RUN	125#						
RUNWT	142#						
RXDVCD	232#	232	331	332	333	334	335
RX8A	77#	226					
SDN	335#	482					
SECTOR	390	550	552	577#			
SEND	122#						
SENDW	131#						
SER	334#	587					
SHERTZ	98#						
SKPINS	128#	344					
SPECL	520	552#					
START	176	343#					
STATE	406	487	570	588#	588		
STATUS	349#	407	428	431			
STR	333#	477					
STARIT	399	408#					
SUNIT	103#						
SUSPND	126#						
SWAPPE	70#	181	157	159			
SWPWT	143#						
SYS	102#						
TASK	172	174	178	226#			
TFTABL	155#	158	178				
TOOH	165#						

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TODL	164#						
TRACK	396	546	555	576#			
TRANS	415	476#	480	553	556		
TRANWO	414#						
TRYAGN	495#	568					
TRYCNT	494	567	572#				
YSTABL	153#	155	174				
TSWFLG	163#						
TTY	65#						
T2	508	511#					
UDC	135						
UNBARG	132#						
USERWT	145#						
WAITE	124#	584					
WAITM	118#						
WC	348#	377	387	400	420		
WORDLP	400#	421					
XDR	332#	479	485				
13364	451						
13365	436						
13366	415						
13367	406						
13370	404	424					
13371	396						
13372	395						
13373	390						
13374	380						
13375	379						
13376	371						
13377	370						
13564	571						
13565	525						
13566	523						
13567	517						
13570	509						
13571	501	586					
13572	498	506					
13573	496						
13574	495	503	511	518			
13575	493						
13576	488	563					
13577	486						

V3

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```

1 /PARAMETERS FOR RTS-8 TASKS (VERSION 2)
2 /
3 /
4 /
5 /
6 /
7 /
8 /
9 /
10 /
11 /COPYRIGHT (C) 1974,1975 BY DIGITAL EQUIPMENT CORPORATION
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44 /

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45 /RTS8 V2 EXEC PARAMETERS - EDITED BY USER
46
47
48 0001 PDP0E=1
49 0000 PDP12=0
50 0001 EAE=1
51 0001 PWRPAL=1
52 0030 MGHFLO=30
53 0023 NTASKS=23
54 0001 CHECKPT=1
55 0000 PARTNS=0
56
57 / (THE N PARTITIONS ARE NUMBERED FROM 0 TO N-1)
58
59 /COMMON TASK NUMBERS - EDITED BY USER
60 /IT IS ADVISABLE TO DEFINE ALL TASKS HERE, NAMES GIVEN BELOW
61 /ARE USED BY SOME SYSTEM TASKS AND SHOULD BE DELETED FROM THIS
62 /LIST IF THE CORRESPONDING TASK IS NOT INCLUDED IN THE SYSTEM
63
64 0001 CLOCK=1
65 0002 PWRP=2
66 0003 TTY=3
67 0004 LPT=4
68 0005 MCR=5
69 0006 LTA=6
70 0007 OTA=7
71 0021 SWAPPER=21
72 0010 RK0=10
73 0011 RF00=11
74 0012 DF32=12
75 0013 CSA=13
76 0014 CSF=14
77 0016 ICS=16
78 0017 RX00=17
79 0023 OS0=NTASKS
80 0020 OS0F=20
81
82 /SOFTWARE PARAMETERS - EDITED BY USER
83
84 0002 OSFLOS=2
85 0030 OSKBDV=30
86 0031 OSTTDV=31
87 0010 OSSYSD=RX0
88 0004 OSFILL=4
89
90 > IFDEF MCR <
91 0001 MCRSYS=1
92 >
93 > IFDEF CLOCK <
94 0000 CLKTYP=0
95 0020 CLKQLN=20
96 DECIMAL
97 0170 HERTZ=120
98 0074 SHERTZ=60
99 OCTAL

```

366

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100      >
101      IDEF  SHAPPER <
102      0010 SYS=RK8
103      0000 SUNIT=8
104      >

```

367

```

105      /EQUIVALENCES:
106
107      7344 AC7776= CLL STA RAL
108      7346 AC7775= CLL STA RTL
109      7330 AC4000= CLA STL RAR
110      7350 AC3777= CLL STA RAR
111      7332 AC2000= CLA STL RTR
112      7326 AC0002= CLA STL RTL
113
114      /MONITOR CALL VALUES:
115
116      4020 CAL= JMS 20 /CALL THE EXECUTIVE
117      5424 POSTOS= JMP I 24 /DISMISS AN INTERRUPT
118      4425 WAITM= JMS I 25 /WAIT FOR MULTIPLE EVENTS
119
120      /NOTE: "*" MEANS CRITICAL VALUE MAY NOT
121      /BE CHANGED WITHOUT MODIFYING SYSTEM CODE!!
122      0000 SEND= 0 /SEND MESSAGE
123      0001 RECEIV= 1 /RECEIVE MESSAGE
124      0002 WAITE= 2 /WAIT FOR EVENT FLAG
125      0003 RUN= 3 /CONTINUE TASK EXECUTION
126      0004 SUSPND= 4 /SUSPEND TASK EXECUTION
127      0005 POST= 5 /POST AN EVENT FLAG
128      0006 SKPINS= 6 /INSERT CODE INTO INTERRUPT SKIP CHAIN
129      0007 DERAIL= 7 /INITIATE END-ACTION
130      0010 BLKARG= 10 /BLOCK TASK FOR REASON SPECIFIED IN ARG
131      0011 SENDM= 11 /SEND MESSAGE AND WAIT
132      0012 UNBARG= 12 /UNBLOCK TASK FOR REASON SPECIFIED IN ARG
133      4000 FREE= 4000 /**FREE PARTITION
134
135      IDEF UDC <40=0;00=1;01=2;0C=3;EC=4;RC=5
136      DC=6;ECT=7;CS=10;OCT=11;AI=12>
137
138      /TASK STATUS FLAGS:
139
140      4000 NONRWT= 4000 /**NONRESIDENT TASK WAIT
141      2000 EFMT= 2000 /EVENT FLAG WAIT
142      1000 RUNWT= 1000 /SCHEDULE WAIT
143      0400 SWPWT= 0400 /**SHAPPER WAIT
144      0200 EORMWT= 0200 /EVENT FLAG OR MESSAGE WAIT
145      0100 USERWT= 0100 /USER SPECIFIED WAIT
146      0040 ENABWT= 0040 /ENABLE WAIT
147      0020 MSGWT= 0020 /MESSAGE WAIT
148      0010 NETWT= 0010 /NETWORK WAIT (RESERVED FOR POSSIBLE FUTURE USE)
149      0001 DNEWT= 0001 /**DOES NOT EXIST WAIT

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150 /SYSTEM LOCATIONS:
151
152 1176 MSGTBL= 1200=2 /TASK MESSAGE TABLE
153 1244 TSTABL= NTASKS+2*2+MSGTBL=4 /TASK STATE TABLE = HOLDS
154 /TASK LINK,UH,DF,IF,PC,AC,HQ
155 1367 TPTABL= NTASKS+2*4+TSTABL=1 /TASK FLAGS TABLE = HOLDS
156 /TASK STATUS FLAGS
157
158 1414 RESTBL= TPTABL+NTASKS+2 /RESIDENCY TABLE
159 1420 PARTBL= NTASKS-SWAPPER*2+RESTBL+367774 /PARTITION TABLE
160 0043 COMMAND=43 /SWAPPER COMMAND BUFFER
161
162
163 0035 TSWFLG= 35 /TASK SW INHIBIT FLAG IN FIELD 0
164 0036 TODL= 36 /LOW ORDER TIME OF DAY IN FIELD 0
165 0037 TODH= 37 /HIGH ORDER TIME OF DAY IN FIELD 0
166 0040 DATE= 40 /DATE IN Q36 FORMAT IN FIELD 0
167 0041 MCREP= 41 /MCR START EVENT FLAG IN FIELD 0
168

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369

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169 /TASK TABLE SETUP = "TASK", "CUR", "INIWT", AND "START"
170 /MUST BE DEFINED BY TASK:
171
172 1212 *TASK*2+MSGTBL
173 01212 0000 ZBLOCK 2 /MESSAGE BUFFER INITIALLY CLEAR
174 1274 *TASK*4+TSTABL
175 01274 0011 CUR*10+CUR /INITIAL FLAGS
176 01275 5000 START
177 01276 0000 0 /INITIAL AC 0
178 1375 *TASK+TPTABL
179 01375 0000 INIWT

```

370

```

180 /2 RTS=8 LINTAPE HANDLER
181 /
182 /
183 /
184 /
185 /
186 /
187 /
188 /
189 /
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224 /
225 0006 / FIXED BUG ON 18-JUN-75 RE USING DOUBLE BLOCKS IN OS/8 MODE
226 0000 / TASK=LTA
227 0010 / ININT=0
228 / CUR=10
229 5000 / LOC=5000 /LOAD ADDRESS
230 /
231 / SR
232 /
233 / MESSAGE FORMAT:
234 /
235 /LTMESG,ZBLOCK 3 /RTS=8 OVERHEAD
236 / MODE=UNIT
237 / RW=PAGES+FIELD
238 / BUFADD
239 / BLOKNO
240 / STATUS
241 /
242 /MODE= 0 LINTAPE CONTAINS 200 OR 201 WORDS PER BLOCK
243 / 4000 LINTAPE CONTAINS 400 WORDS PER BLOCK
244 /
245 /UNIT= UNIT NUMBER (0-7)
246 /
247 /RW= 0 READ
248 / 4000 WRITE
249 /
250 /PAGES= NUMBER OF PAGES TO TRANSFER (BITS 1-5) 0 MEANS 40
251 / MUST BE EVEN IF 400 WORD PER BLOCK MODE
252 /
253 /FIELD= FIELD OF BUFFER (BITS 6-8)
254 /
255 /BUFADD= ADDRESS OF BUFFER
256 / WORD AFTER END OF BUFFER IS VOLATILE
257 /
258 /BLOKNO= LINTAPE BLOCK NUMBER IF 400 WORD PER BLOCK MODE
259 / OS/8 LOGICAL BLOCK NUMBER IF 201 WORD PER BLOCK MODE
260 / (ONE OS/8 BLOCK = 2 LINTAPE BLOCKS IN THIS CASE)
261 /
262 /STATUS ONES COMPLEMENT OF TAPE CHECKSUM LEFT HERE
263 / 0 MEANS NO ERRORS
264 /
265 /*****/
266 / IN 201 WORD PER BLOCK MODE
267 / WARNING! --> / WORD AFTER END OF BUFFER GETS
268 / TEMPORARILY DESTROYED BY THIS TASK.
269 /*****/
270 /
271 6141 LINC=6141 /ENTER LINC MODE
272 0001 AX0=1 /AC TO EXTENDED TAPE OPERATIONS BUFFER
273 0002 PDP=2 /ENTER PDP-8/I MODE
274 0003 TAC=3 /TAPE ACCUMULATOR BUFFER TO AC
275 0023 TMA=23 /AC TO TAPE MEMORY ADDRESS SETUP REGISTER
276 6151 LMR=6151 /LOAD LINTAPE MAINTENANCE REGISTER

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277      0001      FIELD CURX10
278
279      5000      *LOC
280
281      IFNDEF PDP12 <ERROR *****
282
283      BPTR,      /POINTS TO BUFFER
284      START,    CAL      /INSERT INTERRUPT SKIP IN SKIP CHAIN
285      UNIT,     SKPINS   /UNIT WORD (BIT 0=1 MEANS SPECIAL 400 WORD PER BLOCK MODE)
286      FNWORD,   INTRPT   /BITS 1-5 CONTAIN # OF PAGES LEFT TO XFER
287      LOOP,     CAL
288      15004 0001   RECEIVE /GET A MESSAGE
289      MADDR,    0        /ADDRESS OF MESSAGE LEFT HERE
290      15006 3360   DCA MSGFLO /CDF TO FIELD OF MSG LEFT IN AC
291      15007 7240   STA
292      15010 1205   TAD MADDR
293      15011 3205   DCA MADDR /BUMP BACK MADDR
294      15012 4357   JMS GET   /GET UNIT AND SPECIAL FUNCTIONS BIT
295      15013 3201   DCA UNIT
296      15014 4357   JMS GET   /GET FUNCTION WORD
297      15015 3202   DCA FNWORD
298      15016 4357   JMS GET   /GET BUFFER ADDRESS
299      15017 3200   OCA BPTR
300      15020 1201   TAD UNIT
301      15021 7004   RAL
302      15022 7200   CLA
303      15023 4357   JMS GET   /GET BLOCK NUMBER
304      15024 7420   SNL
305      15025 7104   CLL RAL
306      15026 3255   DCA BLOCK
307      15027 6211   CDF CUR
308      15030 4777   JMS I (PAGE2 /STUFF ON 2ND PAGE
309      15031 1202   TAD FNWORD
310      15032 7006   RTL
311      15033 0266   AND L3    /ISOLATE LOW ORDER UNIT AND R/W BIT
312      15034 7106   CLL RTL   /UNIT TO BIT 0 (OF COURSE)
313      15035 1376   TAD (702  /702=READ ONE BLOCK; 706=WRITE ONE BLOCK
314      15036 3254   DCA LTINST /SAVE NEWLY FORMED LINTAPE INSTRUCTION
315      15037 7346   GLODP,    AC7775 /CAN'T HURT TO RETRY 3 TIMES
316      15040 3363   DCA TRYCNT
317      15041 1200   RETRY,    TAD BPTR /KLUUGE! SAVE 201ST WORD
318      15042 1375   TAD (200   /CAUTION USER ABOUT THIS
319      15043 3357   DCA TEMP   /THIS IS A REAL TIME SYSTEM
320      15044 4327   JMS BUFC
321      15045 1757   TAD I TEMP /SAVE VOLATILE LOCATION
322      15046 6211   CDF CUR   /BACK TO OUR FIELD
323      15047 3364   OCA LOCSAV
324      15050 1200   TAD BPTR
325      15051 6002   IDF
326      15052 6141   LINC
327      15053 0023   TMA
328      15054 0000   LTINST, 0 /PERFORM READ OR WRITE OF ONE BLOCK
329      15055 0000   BLOCK, 0  /LINTAPE INSTRUCTION (702=READ, 706=WRITE)
330      15056 0002   PDP        /BLOCK NUMBER
331      15057 2366   ISZ DFLAG  /BACK TO CIVILISATION
                                   /NOTE THAT LINTAPE IS NOW BUSY

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332      15060 6001   IDN
333      15061 4020   CAL      /A TYPE OF CHARGED ATOM
334      15062 0002   WAITE
335      15063 5166   DFLAG
336      15064 6002   IOF
337      15065 6141   LINC
338      15066 0003   L3,      TAC
339      15067 0002   PDP
340      15070 6001   IDN
341      15071 7040   CMA
342      15072 3325   DCA STATUS /PERMIT INTERRUPTS, WE'RE SAFE NOW
343      15073 1201   TAD UNIT   /USE 1'S COMPLEMENT SINCE 0 MEANS GOOD TO RTS-8
344      15074 7710   SPA CLA    /SAVE RESULTING STATUS WORD
345      15075 5302   JMP NREST
346      15076 1364   TAD LOCSAV /NOTHING TO RESTORE IN 400 WORD/BLOCK MODE
347      15077 4327   JMS BUFC
348      15100 3757   DCA I TEMP /RESTORE 201ST WORD
349      15101 6211   CDF CUR
350      15102 1254   NREST,    TAD LTINST
351      15103 0374   AND (4
352      15104 7640   SZA CLA    /READ OR WRITE?
353      15105 3325   DCA STATUS /WRITES CAN'T FAIL
354      15106 1325   TAD STATUS
355      15107 7650   SNA CLA
356      15110 5332   JMP OK
357      15111 2365   ISZ TRYCNT /NO RETRIES IF WRITE WAS BAD
358      15112 5241   JMP RETRY  /READ ERROR
359      15113 4357   EXIT,     JMS GET /GO TRY AGAIN
360      15114 7200   CLA        /AC MIGHT BE NON-ZERO
361      15115 1325   TAD STATUS  /DATA FIELD IS NOW RIGHT
362      15116 3605   DCA I MADDR
363      15117 1360   TAD MSGFLO
364      15120 3325   DCA EFCOF
365      15121 1205   TAD MADDR
366      15122 1373   TAD (-7
367      15123 4020   CAL
368      15124 0005   POST
369      15125 7402   STATUS,    HLT /DNES COMPLEMENT OF TAPE CHECK
370      15126 5203   EFCOF,    JMP LDOP /GET ANDTHER MESSAGE
371
372
373      15127 0000   BUFC, 0
374      15130 7402   BUFCOF, HLT
375      15131 5727   JMP I BUFC

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376 15132 1201 OK, TAD UNIT
377 15133 7004 RAL
378 15134 7200 CLA
379 15135 1202 TAD FNWORD
380 15136 0372 AND (3700)
381 15137 7450 SNA
382 15140 1371 TAO (4000) /DON'T UPSET LINK BUT 0 MEANS 40
383 15141 7430 SZL
384 15142 1370 TAD (-100) /READ 2 PAGES IN SPECIAL MOOE
385 15143 1370 TAD (-100) /READ ONE PAGE IN REGULAR MOOE
386 15144 7550 SPA SNA /ANY MORE PAGES TO READ?
387 15145 5313 JMP EXIT /NO (IGNORE LAST ODD-PAGE IF IN 400 WRD MOOE)
388 15146 3202 OCA FNWORD /YES, PUT 0 BACK IN 'FNWORD'
389 15147 1201 TAO UNIT
390 15150 7710 SPA CLA
391 15151 1375 TAD (200) /ADVANCE BUFFER PTR 400 IF 400 NO MOOE
392 15152 1375 TAD (200) /OR 200 IF 200/201 NO MOOE
393 15153 1200 TAO BPTR
394 15154 3200 OCA BPTR
395 15155 2255 ISZ BLOCK
396 15156 5237 JMP GLOOP /POINT TO NEXT BLOCK
397
398
399 15157 0000 TEMP, 0 /SHORT FOR TEMPORARY
400 GET, 0 /DON'T TOUCH LINK
401
402 15160 7402 MSGFLD, HLT
403 15161 2205 ISZ MADOR
404 15162 1605 TAD I MADOR
405 15163 5757 JMP I GET
406
407 15164 0000 LOCSAV, 0
408 15165 7775 TRYCNT, =3
409 15166 0000 OFLAG, 0 /TAPE DONE FLAG (0=DONE, 1=BUSY)
410 15170 7700
411 15171 4000
412 15172 3700
413 15173 7771
414 15174 0004
415 15175 0200
416 15176 0702
417 15177 5216
418 5200 PAGE

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418 15200 0000 INTRPT, ZBLOCK 2 /RTS-8 OVERHEAD
419 15202 1377 TAD (100) /SKIP IF TAPE DONE FLAG=1
420 15203 6151 LHR
421 15204 7610 SKP CLA /NOT DONE, CLEAR AC AND BRANCH BUT NOT JUMP
422 15205 7610 SKP CLA /DONE
423 15206 5600 JMP I INTRPT /NOT DONE, GO ON TO NEXT SKIP
424 15207 6211 CDF CUR
425 15210 1376 TAD (200) /CLEAR TAPE DONE FLAG
426 15211 6151 LHR
427 15212 7200 CLA /PLAY SAFE
428 15213 1375 TAD (OFLAG)
429 15214 6202 CIF 0 /POST DONE FLAG
430 15215 5424 POSTOS /DISMISS INTERRUPT
431
432 15216 0000 PAGE2, 0
433 15217 1774 TAD I (FNWORD)
434 15220 0373 AND (70)
435 15221 1372 TAD (CDF)
436 15222 3771 OCA I (BUFCOF)
437 15223 1774 TAD I (FNWORD)
438 15224 0373 AND (70) /ISOLATE FIELD OF BUFFER
439 15225 7106 CLL RTL
440 15226 7006 RTL
441 15227 7006 RTL /FIELD TO BITS 0-2
442 15230 3245 OCA TEM
443 15231 1770 TAD I (UNIT)
444 15232 0367 AND (7) /ISOLATE UNIT NUMBER FROM UNIT WORD
445 15233 7110 CLL RAR /HIGH-ORDER UNIT BITS TO AC 10,11
446 15234 1245 TAD TEM /COMBINE AND ALSO PUT LOW-ORDER UNIT # IN LINK
447 15235 1366 TAD (130) /ENABLE INTERRUPTS, EXTENDED MOOE, NO PAUSE
448 15236 6002 IOF /DISASTER IF GET INTERRUPT WHILE IN DREADED
449 15237 6141 LINC /LINC MOOE
450 15240 0001 AXO /SEND FUNCTION TO CONTROLLER
451 15241 0002 POP /BACK TO SAFE POP-8 MOOE
452 15242 6001 ION /THAT WASN'T TOO BAD NOW WAS IT?
453 15243 7200 CLA
454 15244 5616 JMP I PAGE2
455
456 15245 0000 TEM, 0
457 15366 0130
458 15367 0007
459 15370 5001
460 15371 5130
461 15372 6201
462 15373 0070
463 15374 5002
464 15375 5166
465 15376 0200
466 15377 0100
467

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376

AC0002 7326	MSGFLD 5160	TTY 0003
AC2000 7332	MSGTBL 1176	UNBARG 0012
AC3777 7350	MSGWT 0020	UNIT 5001
AC4000 7330	NETWT 0010	USERWT 0100
AC7775 7346	NONRWT 4000	WAITE 0002
AC7776 7344	NOREST 5102	WAITH 4425
AXO 0001	NTASKS 0023	
BLKARG 0010	OK 5132	
BLOCK 5055	OSFILL 0004	
BPTR 5000	OSFLDS 0002	
BUFC 5127	OSKBDY 0030	
BUFCDF 5130	OSYSD 0010	
CAL 4020	OSTDY 0031	
CHECKP 0001	OS 0023	
CLKQLN 0020	OSAF 0020	
CLKTYP 0000	PAGE2 5216	
CLOCK 0001	PARTBL 1420	
COMMAN 0043	PARTNS 0000	
CSA 0013	PDP 0002	
CSAF 0014	PDP12 0000	
CUR 0010	PDP0E 0001	
DATE 0040	POST 0005	
DERAIL 0007	POSTOS 5424	
DFLAG 5166	PWRF 0002	
DF32 0012	PWRFAL 0001	
ONEWT 0001	RECEIV 0001	
DTA 0007	RESTBL 1414	
EAE 0001	RETRY 5041	
EFCDP 5125	RF08 0011	
EFWT 2000	RK0 0010	
ENABWT 0040	RUN 0003	
EORMWT 0200	RUNWT 1000	
EXIT 5113	RXA 0017	
FNWORD 5002	SEND 0000	
FREE 4000	SENDW 0011	
GET 5157	SHERTZ 0074	
GLOOP 5037	SKPINS 0006	
HERTZ 0170	START 5000	
HGHFLD 0030	STATUS 5125	
ICS 0016	SUNIT 0000	
INIWT 0000	SUSPND 0004	
INTRPT 5200	SWAPPE 0021	
LINC 6141	SWPWT 0400	
LMR 6151	SYS 0010	
LOC 5000	TAC 0003	
LOCSAV 5164	TASK 0006	
LOOP 5003	TEM 5245	
LPT 0004	TEMP 5157	
LTA 0006	TFTABL 1367	
LTINST 5054	TMA 0023	
L3 5066	TOOH 0037	
MADDR 5005	TOOL 0036	
MCR 0005	TRYCNT 5165	
MCREP 0041	TSTABL 1244	
MCRSYS 0001	TSHFLG 0035	

377

ERRORS DETECTED: 0
LINKS GENERATED: 0

AC0002	112#						
AC2000	111#						
AC3777	110#						
AC4000	109#						
AC7775	108#	315					
AC7776	107#						
AO	135#						
AXO	272#	450					
BLKARG	130#						
BLOCK	306	329#	395				
BPTR	203#	299	317	324	393	394	
BUFC	320	347	373#	375			
BUFCDF	374#	436					
CAL	116#	284	287	333	367		
CHECKP	54#						
CLKQLN	95#						
CLKTYP	94#						
CLOCK	63#	93					
COMMAN	160#						
CS	138#						
C8A	74#						
CSAF	75#						
CT	136#						
CUR	175	175	227#	277	307	322	349 424
DATE	166#						
DERAIL	129#						
DFLAG	331	335	408#	428			
DF32	73#						
DNEWT	149#						
DTA	69#						
EAE	50#						
EFCDP	364	370#					
EFWT	141#						
ENABWT	146#						
EORMWT	144#						
ERROR	281						
EXIT	359#	387					
FNWORD	286#	297	309	379	388	433	437
FREE	133#						
GET	294	296	298	383	359	399#	404
GLOOP	315#	396					
HERTZ	97#						
HGHFLO	52#						
ICS	76#						
INIWT	179	226#					
INTRPT	286	410#	423				
LINC	271#	326	337	449			
LMR	276#	420	426				
LOC	229#	279					
LOCSAV	323	346	406#				
LOOP	287#	371					
LPT	66#						
LTA	68#	225					
LTINST	314	328#	358				
L3	311	338#					
MADDR	289#	292	293	362	365	402	403
MCR	67#	90					
MCREP	167#						
MCRSYS	91#						

379

MSGFLO	290	363	401#				
MSGTBL	152#	153	172				
MSGWT	147#						
NETWT	148#						
NOREST	345	350#					
NTASKS	53#	78	153	155	158	159	
OK	356	376#					
OSFILL	88#						
OSFLOS	84#						
OSKBDV	85#						
OSSYSO	87#						
OSTTDV	86#						
OS8	78#	83					
OS8F	79#						
PAGE2	308	432#	454				
PARTBL	159#						
PARTNS	55#						
PDP	273#	330	339	451			
PDP12	49#	281					
PDP8E	48#						
POST	127#	368					
POSTDS	117#	430					
PWRF	64#						
PWRFAL	51#						
RECEIV	123#	288					
RETBTL	158#	159					
RETRY	317#	358					
RF08	72#						
RK8	71#	87	102				
RUN	125#						
RUNWT	142#						
Rx8A	77#						
SEND	122#						
SENDW	131#						
SHERTZ	98#						
SKPINS	128#	285					
START	176	284#					
STATUS	342	353	354	361	369#		
SUNIT	103#						
SUSPND	126#						
SWAPPE	70#	101	157	159			
SWPWT	143#						
SYS	102#						
TAC	274#	338					
TASK	172	174	178	225#			
TEM	442	446	456#				
TEMP	319	321	348	398#			
TFTABL	155#	156	178				
TMA	275#	327					
TODH	165#						
TODL	164#						
TRYCNT	316	357	407#				
TSTABL	153#	155	174				
TSWFLG	163#						
TTY	65#						
UDC	135						
UNBARG	142#						
UNIT	285#	295	300	343	376	389	443
USERWT	145#						
WALTE	124#	334					

380

WAITH	1108	
+15170	384	385
+15171	382	
+15172	380	
+15173	366	
+15174	351	
+15175	318	391 392
+15176	313	
+15177	308	
+15366	447	
+15367	444	
+15370	443	
+15371	436	
+15372	435	
+15373	434	438
+15374	433	437
+15375	428	
+15376	425	
+15377	419	

V3

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/PARAMETERS FOR RTS=8 TASKS (VERSION PAL8-V9D 09/11/75 PAGE 1

1	/PARAMETERS FOR RTS=8 TASKS (VERSION 2)
2	/
3	/
4	/
5	/
6	/
7	/
8	/
9	/
10	/
11	/COPYRIGHT (C) 1974,1975 BY DIGITAL EQUIPMENT CORPORATION
12	/
13	/
14	/
15	/
16	/
17	/
18	/
19	/
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35	/
36	/
37	/
38	/
39	/
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41	/
42	/
43	/
44	/

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```

45
46      /RTS8 V2 EXEC PARAMETERS - EDITED BY USER
47
48      0001 POPDE=1
49      0000 POP12=0
50      0001 EAE=1
51      0001 PWRFL=1
52      0030 MGHFLD=30
53      0023 NTASKS=23
54      0001 CHECKPT=1
55      0000 PARTNS=0
56
57      /(THE N PARTITIONS ARE NUMBERED FROM 0 TO N-1)
58
59      /COMMON TASK NUMBERS - EDITED BY USER
60      /IT IS ADVISABLE TO DEFINE ALL TASKS HERE, NAMES GIVEN BELOW
61      /ARE USED BY SOME SYSTEM TASKS AND SHOULD BE DELETED FROM THIS
62      /LIST IF THE CORRESPONDING TASK IS NOT INCLUDED IN THE SYSTEM
63
64      0001 CLOCK=1
65      0002 PWRFL=2
66      0003 TTY=3
67      0004 LPT=4
68      0005 MCR=5
69      0006 LTA=6
70      0007 OTA=7
71      0021 SWAPPER=21
72      0010 RK8=10
73      0011 RF08=11
74      0012 DF32=12
75      0013 CSA=13
76      0014 CSAF=14
77      0016 ICS=16
78      0017 RX8A=17
79      0023 OS80NTASKS
80      0020 OS8F=20
81
82      /SOFTWARE PARAMETERS - EDITED BY USER
83
84      0002 OSFLOS=2
85      0030 OSKBDV=30
86      0031 OSTTGV=31
87      0010 OSSYSD=RK8
88      0004 OSFILL=4
89
90      0001 MCRSYS=1
91
92      0000 CLKTP=0
93      0020 CLKOLN=20
94
95      0170 HERTZ=120
96      0074 SHERTZ=60
97
98      OCTAL
99

```

383

```

100      0010 SYS=RK8
101      0000 SUNIT=0
102
103
104

```

384

```

105 /EQUIVALENCES:
106
107 7344 AC7776= CLL STA RAL
108 7346 AC7775= CLL STA RTL
109 7338 AC4888= CLA STL RAR
110 7338 AC3777= CLL STA RAR
111 7332 AC2888= CLA STL RTR
112 7326 AC8882= CLA STL RTL
113
114 /MONITOR CALL VALUES:
115
116 4828 CAL= JMS 20 /CALL THE EXECUTIVE
117 5424 POSTDB= JMP I 24 /DISMISS AN INTERRUPT
118 4425 WAITH= JMS I 25 /WAIT FOR MULTIPLE EVENTS
119
120 /NOTE: "*" MEANS CRITICAL VALUE MAY NOT
121 /BE CHANGED WITHOUT MODIFYING SYSTEM CODE!!
122
123 0000 SEND= 0 /SEND MESSAGE
124 0001 RECEIV= 1 /RECEIVE MESSAGE
125 0002 WAITE= 2 /WAIT FOR EVENT FLAG
126 0003 RUN= 3 /CONTINUE TASK EXECUTION
127 0004 SUSPND= 4 /SUSPEND TASK EXECUTION
128 0005 POST= 5 /POST AN EVENT FLAG
129 0006 SKPIN= 6 /INSERT CODE INTO INTERRUPT SKIP CHAIN
130 0007 DERAIL= 7 /INITIATE END-ACTION
131 0010 BLKARG= 10 /BLOCK TASK FOR REASON SPECIFIED IN ARG
132 0011 SENDW= 11 /SEND MESSAGE AND WAIT
133 0012 UNBARG= 12 /UNBLOCK TASK FOR REASON SPECIFIED IN ARG
134 4880 FREE= 4880 /**FREE PARTITION
135
136 IFDEF UDC <AD=0/DO=1/DI=2/GC=3/EC=4/RC=5
137 DC=6/ECT=7/CS=10/DCY=11/AI=12>
138
139 /TASK STATUS FLAGS:
140
141 4000 NONRHT= 4000 /**NONRESIDENT TASK WAIT
142 2000 EPHT= 2000 /EVENT FLAG WAIT
143 1000 RUNHT= 1000 /SCHEDULE WAIT
144 0400 SWPHT= 0400 /**SWAPPER WAIT
145 0200 EDRHT= 0200 /EVENT FLAG OR MESSAGE WAIT
146 0100 USERHT= 0100 /USER SPECIFIED WAIT
147 0040 ENAHT= 0040 /ENABLE WAIT
148 0020 MSGHT= 0020 /MESSAGE WAIT
149 0010 NETHT= 0010 /NETWORK WAIT (RESERVED FOR POSSIBLE FUTURE USE)
150 0001 DNEHT= 0001 /**ODES NOT EXIST WAIT

```

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```

150 /SYSTEM LOCATIONS:
151
152 1176 MSGTBL= 1200=2 /TASK MESSAGE TABLE
153 1244 TSTABL= NTASKS+2*2+MSGTBL=4 /TASK STATE TABLE = HOLDS
154 1367 TFTABL= NTASKS+2*4+TSTABL=1 /TASK LINK, UN, DP, IF, PC, AC, HQ
155 /TASK FLAGS TABLE = HOLDS
156 /TASK STATUS FLAGS
157
158 IFDEF SWAPPER <
159 1414 RESTBL= TFTABL+NTASKS+2 /RESIDENCY TABLE
160 1420 PARTBL= NTASKS+SWAPPER*2+RESTBL+3&7774 /PARTITION TABLE
161 0043 COMMAND=43 /SWAPPER COMMAND BUFFER
162
163 0035 TSNFLG= 35 /TASK SW INHIBIT FLAG IN FIELD 0
164 0036 TODL= 36 /LOW ORDER TIME OF DAY IN FIELD 0
165 0037 TODH= 37 /HIGH ORDER TIME OF DAY IN FIELD 0
166 0040 DATE= 40 /DATE IN OS8 FORMAT IN FIELD 0
167 0041 MCREP= 41 /MCR START EVENT FLAG IN FIELD 0
168

```

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```

169 /TASK TABLE SETUP = "TASK", "CUR", "ININT", AND "START"
170 /MUST BE DEFINED BY TASK1
171
172 *TASK*2+MSGTBL
173 01232 0000 ZBLOCK 2 /MESSAGE BUFFER INITIALLY CLEAR
174 01334 1334 *TASK*4+TSTABL
175 01334 0011 CUR10+CUR /INITIAL FLAGS
176 01335 0063 START
177 01336 0000 0 /INITIAL AC 0
178 1405 *TASK*7FTABL
179 01405 0000 ININT

```

387

```

180 /ICS/UDC HANDLER V2 FOR RTS-8 V2
181 /
182 /
183 /
184 /
185 /
186 /
187 /
188 /
189 /
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191 /
192 /
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214 /
215 /
216 /
217 /
218 /
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220 /
221 /
222 /
223 /
224 IFDEF UDC <CONASB=1>
225 IFDEF ICS <CONASB=1>
226 IFDEF CONASB <

```

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227      0010      CUR=10
228      IFDEF UDC < TASK=UDC >
229      0010      IFDEF ICS < TASK=ICS >
230      0000      INIWT=0      /START RUNNING
231
232      //DEFINE HARDWARE PARAMETERS FOR ICS/UDC HANDLER TASK
233      DECIMAL
234
235      0000      FAD=0      /ADDR OF FIRST A/D CHANNEL
236      0002      NAD=2      /MUST BE CONTIGUOUS CHANNELS (UDC)
237      IFDEF UDC < NMPLX=0 >      /NO. OF A/D CHANNELS
238      0007      NMPLX=7      /DEFAULT OF ZERO FOR UDC
239      0010      DELTA=NMPLX+1      /NO. OF ICS MULTIPLEXOR MODULES PER CONVERTER
240      0020      DELTA=DELTA*NAD
241      0010      FCTR=14      /ADDR OF FIRST COUNTER
242      0001      NCNTR=1      /MUST BE CONTIGUOUS CHANNELS
243      0000      FCT=0      /NO. OF COUNTERS
244      0000      NCNTC=2      /ADDR OF FIRST CONTACT
245      0002      /MUST BE CONTIGUOUS CHANNELS
246      /NO. OF CONTACTS
247
248      OCTAL
249      //DEFINE SOFTWARE PARMETERS FOR ICS/UDC HANDLER TASK
250
251      0012      OPCODE=12      /NO. OF OP CODES IN HANDLER
252      0012      RINGBP=12      /NO. OF INTERRUPTS IN RING BUFFER
253
254

```

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```

255      /11 POSSIBLE OPERATIONS:
256      /EACH CALL IS 10 WORDS LONG (INCL HEADER)
257      /WORD 10 IS SET TO CONTAIN ERROR FLAGS
258
259      /ANALOG OUTPUT      OP CODE
260      /      MAJOR CHANNEL
261      /      CHANNEL(0,1) + VALUE(2-11)
262      /DIGITAL OUTPUT      OP CODE
263      /      CHANNEL
264      /      VALUE
265      /DIGITAL INPUT      OP CODE
266      /      CHANNEL
267      /      0 FOR ANSWER
268      /GET GENERIC CODE      OP CODE
269      /      CHANNEL NUMBER
270      /      0 FOR ANSWER
271      /ENABLE CONTACT      OP CODE
272      /      BIT+CHANNEL NUMBERS
273      /      ACTION CODE(0,1,2), ONCE FLAG(3)
274      /      TASK NO.(4-11)
275      /      0=SET EVENT FLAG(NO TASK NO LEEDED)
276      /      NO ASSOC. INFO(0)
277      /      1=RUN TASK
278      /      NO ASSOC. INFO(0)
279      /      2=DERAIL THE TASK TO
280      /      ADDRESS(SAME FIELD AS MESSAGE)
281      /      3=1=DO ACTION JUST ONCE
282      /      3=0=FOR EACH INTERRUPT
283      /DISABLE CONTACT      OP CODE
284      /      BIT + CHANNEL NUMBER
285      /ENABLE COUNTER      OP CODE
286      /      CHANNEL NUMBER
287      /      INIT VALUE
288      /      RELOAD VALUE(0=DON'T RELOAD)
289      /      ACTION CODE, ONCE FLAG + TASK(4-11)
290      /      0=SET EVENT FLAG
291      /      NO ASSOC. INFO(0)
292      /      1=RUN TASK
293      /      NO ASSOC. INFO(0)
294      /      2=DERAIL THE TASK TO
295      /      ADDRESS(SAME FIELD AS MESSAGE)
296      /      3=1=DO ACTION JUST ONCE
297      /      3=0=FOR EACH INTERRUPT
298      /DISABLE COUNTER      OP CODE
299      /      CHANNEL NUMBER
300      /READ COS      OP CODE
301      /      CHANNEL NUMBER
302      /      0 FOR ANSWER
303      /ANALOG INPUT      OP CODE
304      /      /**** ICS ****
305      /      MAJOR CHANNEL // LESS THEN 17(10)
306      /      ENABLE,GAIN,SUBCHANNEL // 0-120(10)
307      /      0 FOR ANSWER
308      /      /**** UDC ****
309

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310 /
311 / MAJOR CHANNEL
312 / ENABLE,GAIN,SUBCHANNEL
313 / 0 FOR ANSWER
314 /READ COUNTER OP CODE
315 / CHANNEL NUMBER
316 / 0 FOR ANSWER
317 /
318 /
319 / 1 -- INVALID GENERIC CODE FOR THE OPERATION
320 / 2 -- INVALID CHANNEL OR SUBCHANNEL
321 / 3 -- OP CODE OUT OF RANGE
322 / 5 -- ICS/UDC NOT RESPONDING CORRECTLY (POWERED OFF OR HARD ERROR)
323 /
324 /
325 /DEFINITIONS OF IOTS
326 6361 UOSF=6361
327 6364 UOEI=6364
328 6365 UODI=6365
329 6366 UDLA=6366
330 6367 UORO=6367
331 6367 UOLD=6367
332 6351 UOSB=6351
333 6353 UOSC=6353
334 6356 UORA=6356
335 6357 UDLB=6357
335 6355 UDRB=6355

```

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336 0001 FIELD CURX10
337 0130 *130
338 10130 0000 T1, /GEN TEMP
339 10131 0000 T2, /"
340 10132 0000 AT2, /ADDRESS PTR
341 10133 0000 RINGCT, /COUNT OF FULLNESS OF RING BUFFER
342 10134 0737 ENDOP, END /AFTER PROCESSING A COMMAND
343 10135 0000 TBLPTR, /FOR POINTING TO ALL INTERNAL TABLES
344 10136 0000 ADDRUP, 0
345 10137 0642 MOREIO, UDCMOR
346 10140 1266 RINGON, RINGEND
347 10141 0000 ERRNMB, 0 /ERROR NUMBER (IF ZERO NO ERROR)
348 /
349 10142 0000 CDFMSG, 0
350 10143 0000 MSGCOF, 0
351 10144 5542 JMP I CDFMSG
352 /
353 0600 *600
354 10600 4020 GOTMAL, CAL
355 10601 0001 RECEIV
356 10602 0000 CALADR, 0
357 10603 3143 OCA MSGCOF
358 10604 3141 OCA ERRNMB /CLEAR ERROR NUMBER
359 10605 1202 TAO CALADR
360 10606 3241 OCA SVAADR
361 10607 1202 TAO CALADR
362 10610 3136 DCA ADDRUP /ADDRESS FOR LOOKING AT ARB8
363 10611 4142 JMS CDFMSG
364 10612 1602 TAO I CALADR /GET OP CODE
365 10613 6211 COF CUR
366 10614 7510 SPA /0=12
367 10615 5777 JMP I (BADOP
368 10616 1376 TAO (=OPCODE /UPPER LIMIT OF OP CODES
369 10617 7540 SZA SHA
370 10620 5777 JMP I (BADOP
371 10621 1375 TAO (OPTBL+OPCODE
372 10622 3130 DCA T1
373 10623 1530 TAO I T1
374 10624 3130 OCA T1
375 10625 5530 JMP I T1 /DISPATCH TO TASK
376 10626 1473 OPTBL, AOP
377 10627 1473 OOP
378 10630 1462 DIOP
379 10631 1730 GCDP
380 10632 2000 ECNTR
381 10633 1324 ROCNTR
382 10634 1714 DCNTR
383 10635 1600 ECAOP
384 10636 1721 ROCOS
385 10637 1705 DCAOP
386 10640 2067 AIOP
387 10641 0000 SVAADR, 0

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388 10642 6213 UDCMOR, CIF CDF CUR
389 10643 1133 TAD RINGCT /0=EMPTY,10=FULL
390 10644 7640 SZA CLA
391 10645 5774 JMP I (DORING /HANDLE THE RING BUFFER
392 10646 6201 CDF 0 /BUFFER EMPTY
393 10647 1773 TAD I (TASK=2+MSGTBL
394 10650 7640 SZA CLA
395 10651 5200 JMP GOTHAL /MESSAGE WAITING
396 10652 1372 TAD (4000+TASK
397 10653 3262 DCA UDCEV
398 10654 6211 CDF CUR
399 10655 6202 CIF 0
400 10656 6002 IOF
401 10657 4425 WATH /RTS8 SUBROUTINE TO BLOCK
402 10660 0200 EORMWT /CURRENT TASK
403 10661 5242 JMP UDCMOR
404
405 10662 0000 UDCEV, 0
406
407 START,
408 IPDEF PWRP<
409 10663 4020 CAL
410 10664 0000 SEND
411 10665 0002 PWRP
412 10666 1557 DRLADR
413
414 10667 4020 CAL
415 10670 0006 SKPIN8
416 10671 1000 DERINT, UDCINT /DERAIL ENTRY POINT FOR POWER RECOVERY
417 10672 7300 CLA CLL
418 10673 1371 TAD (=NCNTC
419 10674 7450 SNA
420 10675 5313 JMP GENERAL
421 10676 3131 DCA T2
422 10677 1370 TAD (DCOSTB
423 10700 3130 DCA T1
424 10701 1367 TAD (PCT /GET ADDRESS OF FIRST CONTACT
425 10702 3132 DCA AT2
426 10703 1132 INITLP, TAD AT2
427 10704 6363 UDLA
428 10705 6366 UDRO
429 10706 3530 OCA I T1 /LOAD UP TBL WITH INIT VALUES
430 10707 2132 ISZ AT2
431 10710 2130 ISZ T1
432 10711 2131 ISZ T2
433 10712 5303 JMP INITLP
434 10713 3133 GENERAL, DCA RINGCT /STARTS OUT EMPTY
435
436 10714 1366 TAD (RINGBT
437 10715 3765 DCA I (RINGBT /RINGCT=RINGBT=FULL/0=EMPTY
438 10716 1366 TAD (RINGBT
439 10717 3764 DCA I (TBLOUT
440 10720 1363 TAD (=DCOSTB+CNTCTB
441 10721 3131 DCA T2
442 10722 1362 TAD (CNTCTB /FROM A SAFE DISTANCE

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443 10723 3130 DCA T1 /START TO FILL TABLES
444 10724 7240 NEGIT, CLA CMA /WITH 7777
445 10725 3530 DCA I T1
446 10726 2130 ISZ T1
447 10727 2131 ISZ T2
448 10730 5324 JMP NEGIT
449 10731 6364 UDEI
450 10732 5242 JMP UDCMOR
451
452 10733 3143 ANIEXT, DCA MSGCDF
453 10734 7346 AC7775
454 10735 1132 TAD AT2
455 10736 3241 DCA SAVADR
456
457 10737 7300 END, CLA CLL /NO ERRORS RETURN
458 10740 1241 TAD SAVADR
459 10741 1361 TAD (6
460 10742 3130 DCA T1 /7TH WORD IS STATUS
461 10743 1141 TAD ERNMB
462 10744 4142 JMS CDFMSG
463 10745 3530 DCA I T1
464 10746 6211 CDF CUR
465 10747 1143 TAD MSGCDF /WHEN ALL DONE, POST EV FLG
466 10750 3355 DCA POSCDF
467 10751 7346 AC7775
468 10752 1241 TAD SAVADR
469 10753 4020 CAL
470 10754 0005 POST
471 10755 0000 POSCDF, 0
472 10756 5242 JMP UDCMOR
473
474
475 10761 0006
476 10762 2200
477 10763 6755
478 10764 1201
479 10765 1122
480 10766 1333
481 10767 0000
482 10770 3223
483 10771 7776
484 10772 4010
485 10773 1232
486 10774 1202
487 10775 0643
488 10776 7766
489 10777 1517
490 10778 1000 PAGE

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491 11000 0000 UDCINT, ZBLOCK 2 /UDC INTERRUPT LEVEL CODE
492 /ND 1 = ADDR NEXT SKIP CHAIN ENTRY
493 /ND 2 = SET TO ITS CDF CIF
494 11002 6361 UDCSKP, UDSF /SKIP IF FLAG SET
495 11003 5600 JMP I UDCINT /EXIT FOR OTHER INTERRUPTS
496 11004 6213 CDF CIF CUR
497 11005 1377 TAD (RINGBT
498 11006 1133 TAD RINGCT
499 11007 7650 SNA CLA
500 11010 5273 JMP NOMORE /IF FULL MUST WAIT
501 11011 1133 TAD RINGCT /ROOM FOR AT LEAST 1 MORE
502 11012 3272 DCA OLOCT /SAVE FOR BUFFER HAS EMPTY CHECK
503 11013 6364 UDDEI /NEEDED BEC, UDSF TURNS INTS OFF
504 11014 6355 MORCHK, UDRS
505 11015 7490 SNA
506 11016 5263 JMP OKPTR /NO INTERRUPT PENDING=DONE
507 11017 6353 UDSC
508 11020 6351 UDSS
509 11021 5220 JMP ,=1 /ONLY A SHORT WAIT
510 11022 6356 UDRA /GET VALUE
511 11023 3722 DCA I RINGPT /GC+ADDR INTO BUFFER
512 11024 7240 CLA CMA
513 11025 1133 TAD RINGCT /NOW THAT WE'VE GOT A VALUE
514 11026 3133 DCA RINGCT /BUMP COUNTER
515 11027 1722 TAD I RINGPT /DECODE TIME
516 11030 7106 CLL RTL
517 11031 7430 SZL
518 11032 5277 JMP NOCNTC /G,T, OR EQ, 4
519 11033 7700 SNA CLA /0,1,2, OR 3
520 11034 5325 JMP ONEZER /BAD NEWS
521 11035 1722 TAD I RINGPT /CONTACT INTERRUPT
522 11036 0376 AND (377 /ADDRESS MASK
523 11037 1375 TAD (DCOSTB=FCY
524 11040 3323 DCA INT1
525 11041 1723 TAD I INT1
526 11042 3324 DCA INT2 /TEMP, SAVE PREVIOUS COS
527 11043 6366 UDRD
528 11044 3723 DCA I INT1 /REPLACE WITH LATEST COS
529 11045 1324 TAD INT2
530 11046 6357 UDLS /GET PREV COS FOR CONTACTS
531 11047 2322 SAVEWO, ISZ RINGPT
532 11050 3722 DCA I RINGPT
533 11051 7100 CLL
534 11052 2322 ISZ RINGPT
535 11053 1322 TAD RINGPT
536 11054 1374 TAD (=RINGTP /AVOID OVERFLO
537 11055 7620 SNA CLA
538 11056 5214 JMP MORCHK
539 11057 7100 CLL
540 11060 1373 TAD (RINGBT /POINT TO BOTTOM AGAIN
541 /BUFFER FILLED BY 2S,
542 11061 3322 DCA RINGPT
543 11062 5214 JMP MORCHK
544 11063 1272 DKPTR, TAD OLOCT
545 11064 7650 SNA CLA

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546 11065 1133 TAD RINGCT /BUFFER WAS EMPTY
547 /SEE IF NOW HAS AN ENTRY
548 11066 7640 SZA CLA /IF NO, POSTDS WITH AC=0
549 11067 1372 TAD (UDCEV /POST UDC EVENT FLAG
550 /BUFFER BECAME NON-EMPTY
551 /SO WAKE UDC UP
552 11070 6202 CIF 0
553 11071 5424 POSTDS
554 11072 0000 OLOCT, 0
555
556 /IF NO MORE ROOM, REMOVE UDSF
557 /LEAVE UDC DISABLED, SET FLAG, + POSTDS WITH AC=0
558 11073 2771 NOMORE, ISZ I (REENAB
559 11074 3202 OCA UDCSKP /0 THE SKIP
560 11075 6202 CIF 0
561 11076 5424 POSTDS /AC=0

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562 11077 7100 NOCNTC, CLL
563 11100 1370 TAD (2000
564 11101 7620 SNL CLA
565 11102 5247 JMP SAVEWD /A 0 FOR COUNTERS
566 11103 1722 TAD I RINGPT
567 IFDEF ICS <
568 11104 0367 AND (17 /ADDR PART FOR SUBCH GET
569 >
570 IFDEF UDC <
571 11105 3323 AND (377 /ADDR PART FOR SUBCH GET
572 11106 6366 DCA INT1
573 >
574 UDRD /GET SUBCHANNEL, PREV ADDR IN
575 /ADDR REG MUST BE FOR THIS CHAN
576 IFDEF ICS <
577 11107 0366 AND (177
578 11110 1365 TAD (=10 /REMOVE BIAS III
579 11111 7100 CLL RTL
580 11112 7000 RTL/ RAL /SUBCHANNEL INTO BITS 1-7
581 11113 7004 >
582 IFDEF UDC <
583 11114 7130 AND (7
584 11115 1323 CLL RTR
585 11116 3722 RTR /INTO BITS 1-3
586 >
587 STL RAR /AND NOW WHEN BIT 0=1 A/D INT
588 INT1
589 TAD INT1
590 DCA I RINGPT /REPLACE WITH REARRANGED VALUE
591 /REARRANGED VALUE:
592 /BIT 0=A/D
593 /**** UDC ****
594 /BITS 1-3=SUBCHANNEL (0=1ST)
595 /BITS 4-11=ADDR
596 /**** ICS ****
597 /BITS 1-7=SUBCHANNEL (0=1ST)
598 /BITS 8-11=ADDR
599 11117 6367 UDLD /LOAD A 0 BEFORE READ(BIT 0)
600 11120 6366 UDLD
601 11121 5247 JMP SAVEWD
602 11122 0000 RINGPT, 0
603 11123 0000 INT1, 0
604 11124 0000 INT2, 0
605 11125 2133 ONEZER, ISZ RINGCT /IGNORE BAD VALUES (OVERWRITE)
606 11126 7000 K7000, NOP
607 11127 5214 JMP MORCHK

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610 ADINT,
611 IFDEF ICS <
612 11130 0367 AND (17
613 >
614 11131 4764 JMS I (ADCHK /GC, SUBCH + ADDR IN AC
615 11132 1763 TAD I (TBLWD1
616 IFDEF UDC <
617 11133 0362 AND (3400 /GET SUBCHANNEL 0=7
618 11134 7112 CLL RTL
619 11135 7010 RTL
620 >
621 /SUBCH+2
622 IFDEF ICS <
623 11136 1132 AND (3760 /GET SUBCHANNEL 0=120
624 11137 3132 CLL RTR
625 11138 1532 RAR /SUBCH+2
626 >
627 TAD AT2 /NOW PTR WILL INCLUDE SUBCH
628 11139 1532 DCA AT2 /TABLE INDEX, INCL SUBCH
629 11140 1532 TAD I AT2
630 11141 3346 DCA ADFLD
631 11142 2132 ISZ AT2
632 11143 1532 TAD I AT2 /ADDR
633 11144 3132 DCA AT2
634 11145 1761 TAD I (TBLWD2
635 11146 0000 ADFLD, 0 /SET TO CDF
636 11147 3532 DCA I AT2 /PASS VALUE BACK
637 11148 6211 CDF CUR
638 11149 3760 DCA I (RGORCH
639 11150 1346 TAD ADFLD
640 11151 5757 JMP I (ANIEXT
641 11152 0733
642 11153 1530
643 11154 1271
644 11155 3760
645 11156 1270
646 11157 2120
647 11158 7770
648 11159 0177
649 11160 2000
650 11161 1200
651 11162 0662
652 11163 1333
653 11164 6422
654 11165 3223
655 11166 0377
656 11167 0012
657 11168 1200
658 11169 1200
659 11170 1200
660 11171 1200

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661 11200 0000 REENAB, 0          /MUST BE WORD 0 OF PAGE
662 11201 0000 TBLOUT, 0
663
664 /NON-INTERRUPT CODE FOR UDC SERVICE
665 11202 7300 DDRING, CLA CLL
666 11203 2777 ISZ I (RGORCM /IN CASE OF ERRORS
667 11204 1601 TAO I TBLOUT /GC+ADDR WORD
668 11205 3270 DCA TBLW01 /GC+ADDR
669 11206 2201 ISZ TBLOUT
670 11207 1601 TAO I TBLOUT /WORD 2
671 11210 3271 OCA TBLWD2
672 11211 2201 ISZ TBLOUT
673 11212 7300 CLA CLL
674 11213 1376 TAO (=RINGTP
675 11214 1201 TAO TBLOUT
676 11215 7620 SNL CLA /CHECK FOR OVERFLOW
677 11216 5221 JMP OKOUT
678 11217 1375 TAO (RINGBT
679 11220 3201 DCA TBLOUT
680 11221 2133 OKOUT, ISZ RINGCT /ROOM FOR 1 MORE
681 11222 7000 NOP
682 11223 6212 CIF CUR /GOES WITH NDMORE CODE
683 11224 1200 TAO REENAB /SEE IF ROOM NOW
684 11225 7650 SNA CLA
685 11226 5233 JMP NOTRUB /NO PROBLEM
686 11227 3200 OCA REENAB /NOW THERE'LL BE ROOM
687 11230 1374 TAO (UDSF /SD FIX IT ALL UP
688 11231 3773 DCA I (UDCSKP
689 11232 6364 UOEI
690 11233 1270 NOTRUB, TAO TBLWD1 /OET, GENERIC TYPE
691 11234 7510 SPA
692 11235 5772 JMP I (ADINT /LO BIT SET =A/D
693 11236 7106 CLL RTL
694 11237 7420 SNL
695 11240 5771 JMP I (CONTAC

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696 /JUMPING ON THRU
697 11241 7300 COUNTR, CLA CLL
698 11242 1270 TAO TBLW01
699 11243 4770 JMS I (CDUNCK /TEST FOR VALIDITY
700 11244 3135 DCA TBLPTR /CNTTBL PTR
701 11245 1535 TAO I TBLPTR /CHECK FOR RELEAD
702 11246 3130 DCA T1
703 11247 2135 ISZ TBLPTR
704 11250 1535 TAO I TBLPTR
705 11251 7001 IAC
706 11252 7650 SNA CLA
707 11253 5537 JMP I MDREIO /THIS COUNTER NOT CURRENTLY ENABLED
708 11254 1270 TAO TBLW01
709 11255 0367 AND (377 /ADDR
710 11256 6002 IOF
711 11257 6363 UOLA
712 11260 1130 TAD T1
713 11261 7440 SZL
714 11262 6367 UOLD /RESET TO FETCHED VALUE
715 11263 6363 UOLA /BACK TO ADDR 0
716 11264 6001 ION
717 11265 4272 JMS DISPTH
718 11266 3777 RRGEND, OCA I (RGORCM /CLEAR IT
719 11267 5537 JMP I MDREIO
720 11270 0000 TBLW01, 0
721 11271 0000 TBLWD2, 0
722
723 11272 0000 DISPTH, 0
724 11273 1135 TAO TBLPTR
725 11274 3766 OCA I (DPLG
726 11275 1535 TAO I TBLPTR
727 11276 0365 AND (177
728 11277 3130 DCA T1 /ACTION + TASK NO.
729 11300 1535 TAO I TBLPTR
730 11301 2135 ISZ TBLPTR /DETERMINE ACTION
731 11302 7106 CLL RTL
732 11303 7420 SNL
733 11304 5312 JMP ZROTWO
734 11305 7300 CLA CLL
735 11306 1130 TAD T1 /10RUN
736 11307 4020 CAL
737 11310 0003 RUN
738 11311 5764 JMP I (ENODIS
739 11312 7700 ZROTWO, SNA CLA /LD 3=0 FOR E,F; BIT 2=1 FOR E,A.
740 11313 5763 JMP I (BEVFLG
741 11314 1535 TAD I TBLPTR /GET ADDR FOR DERAIL
742 11315 3321 DCA EADDR
743 11316 1130 TAO T1
744 11317 4020 CAL
745 11320 0007 DERAIL
746 11321 0000 EADDR, 0
747 11322 5764 JMP I (ENODIS
748 11323 5672 DISPTH, JMP I DISPTH
749
750 11324 4762 RDCNTR, JMS I (ARG2

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400

751	11325	4378	JMS	(COUNCK
752	11326	6882	IOF	
753	11327	7280	CLA	
754	11330	1761	TAD 1	(CHANNO
755	11331	6363	UDLA	
756	11332	5760	JMP 1	(READCH

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757             IFZERO RINGBF+RINGBF+,-REENAB=16084000+
758             PAGE>
759             /LEAVE ROOM FOR CODE+LITERALS
760             /TRY TO PREVENT PAGE OVERFLOWS
761
762             /RING BUFFER HAS 2 WORDS/INTERRUPT
763             /WORD 1 = GC+ADDR/4NNN=A/D
764             /WORD 2 = XOR FOR CONTACTS,0 FOR COUNTERS,A/D VALUE FOR AI
765 11333 0000  RINGBT, ZBLOCK 2=RINGBF-1
766 11356 0000  RINGTP, 0
767             /IF IT'S IN THE RING BUFFER, IT AT LEAST HAD A
768             /VALID GENERIC CODE (NOT 0 OR 1) AT INTERRUPT TIME
769 11360 1463
770 11361 1556
771 11362 1506
772 11363 1400
773 11364 1410
774 11365 0177
775 11366 1422
776 11367 0377
777 11370 2046
778 11371 1423
779 11372 1130
780 11373 1002
781 11374 6361
782 11375 1333
783 11376 6422
784 11377 1530
785             1400             PAGE

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786 11400 1377 SEVFLG, TAD (6200 /6200 TO FORM CDF
787 11401 1130 TAD T1 /WITH SAVED HI 6 BITS
788 11402 3207 OCA EFCDF
789 11403 7346 AC7775
790 11404 1535 TAD I TBLPTR /ADDR IN TBL
791 11405 4020 CAL
792 11406 0005 POST
793 11407 0000 EFCDF, 0
794
795 /SET USER'S MESSAGE EV FLAG IMMED
796 /WHEN CALLED IF TASK NO OR DERRAIL
797 /IF EVENT FLAG, WAIT TIL VERY END
798
799 11410 1422 ENDDIS, TAD I DFL0
800 11411 0376 AND (400
801 11412 7450 SNA CLA
802 11413 5775 JMP I (ODSPTH /MORE THAN ONCE
803 11414 7240 CLA CMA
804 11415 3622 OCA I DFL0 /ONCE ONLY, 7777 BACK IN TABLE
805 11416 2222 ISZ DFL0
806 11417 7240 CLA CMA
807 11420 3622 OCA I DFL0
808 11421 5775 JMP I (ODSPTH
809 11422 0000 DFL0, 0
810

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809 11423 7700 CONTAC, SNA CLA
810 11424 5540 JMP I RINGON
811 11425 1774 TAD I (TBLWD1
812 11426 4773 JMS I (CNTCK /CHECK FOR ALL LEGAL
813 11427 1130 TAD T1
814 11430 3261 OCA CCHNO /CHANNEL NO, STRIPPED
815 11431 1772 TAD I (TBLWD2
816 11432 3257 OCA ROTWD /COS VALUE
817 11433 3260 OCA BITCNT /WILL COUNT BITS
818 11434 1257 NOTSET, TAD ROTWD /ROTATED ALREADY FOR BIT TO EXAM
819 11435 7450 SNA
820 11436 5540 JMP I RINGON /ALL BITS CHECKED
821 11437 7700 SNA CLA /CHECK FOR SET BITS
822 11440 5252 JMP ROTATE
823 /IF BIT SET, DO ITS ACTION, CHECK ALL 12 BITS
824 /IF BIT = 0, MOVE ON
825 11441 1260 TAD BITCNT
826 11442 3131 OCA T2
827 11443 1261 TAD CCHNO
828 11444 3130 OCA T1
829 11445 4771 JMS I (CINDEX
830 11446 1535 TAD I TBLPTR
831 11447 7001 IAC
832 11450 7640 SZA CLA
833 11451 4770 JMS I (DISPTH /DO WHAT HE SAYS
834 11452 2260 ROTATE, ISZ BITCNT
835 11453 1257 TAD ROTWD
836 11454 7104 RAL CLL
837 11455 3257 OCA ROTWD
838 11456 5234 JMP NOTSET
839 11457 0000 ROTWD, 0
840 11460 0000 BITCNT, 0
841 11461 0000 CCHNO, 0

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842 11462 4300 DIOP, JMS GC0 /CHECK GENERIC CODE
843 11463 2136 READCH, ISZ ADDRUP
844 11464 6366 UDOD
845 11465 6001 ION
846 11466 4142 JMS CDFH86
847 11467 3536 DCA I ADDRUP /RETURN VALUE
848 11470 6211 CDF CUR
849 11471 6363 UDLA /RESET TO 0 FOR READ COUNTER
850 11472 5534 JMP I ENDDP
851
852
853 11473 4300 AODP, JMS GC0
854 11474 4306 DOOP, JMS ARG2
855 11475 6367 UDLD /LOAD THE DIGITAL (ANALOG) OUTPUT
856 11476 6001 ION
857 11477 5534 JMP I ENDDP
858
859 11500 0000 GC0, 0
860 11501 4306 JMS ARG2
861 11502 4331 JMS CHNLCK
862 11503 7640 SZA CLA
863 11504 5321 JMP BADGC /MUST BE 0
864 11505 5700 JMP I GC0
865
866 11506 0000 ARG2, 0 /GET NEXT ARG
867 11507 2136 ISZ ADDRUP
868 11510 4142 JMS CDFH86
869 11511 1536 TAD I ADDRUP
870 11512 6211 CDF CUR
871 11513 5700 JMP I ARG2
872
873 11514 2141 ISZ ERRNMB /ADD ONE TO ERROR NUMBER (#06)
874 11515 2141 DVCERR, ISZ ERRNMB /ADD ONE TO ERROR NUMBER (#05)
875 11516 2141 ISZ ERRNMB /ADD ONE TO ERROR NUMBER (#04)
876 11517 2141 BADOP, ISZ ERRNMB /ADD ONE TO ERROR NUMBER (#03)
877 11520 2141 CHNNG, ISZ ERRNMB /ADD ONE TO ERROR NUMBER (#02)
878 11521 2141 BADGC, ISZ ERRNMB /ADD ONE TO ERROR NUMBER (#01)
879 11522 6001 ION /LEFT OFF IN CHNLCK
880 11523 7300 CLA CLL
881 11524 1330 TAD RGORCH
882 11525 7640 SZA CLA
883 11526 5540 JMP I RINGDN /OCCURRED AT DURING TIME
884 11527 5534 JMP I ENDDP
885 11530 0000 RGORCH, 0
886
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887
888 11531 0000 CHNLCK, 0
889 11532 7510 SPA
890 11533 5320 JMP CHNNG
891 11534 3356 DCA CHANNO /MUST BE 0=377
892 11535 1356 TAD CHANNO
893 11536 1367 TAD (=377)
894 11537 7740 SZA CLA
895 11540 5320 JMP CHNNG
896 11541 6002 IOF
897 11542 1356 TAD CHANNO
898 11543 6363 UDLA
899 11544 7200 CLA CMA /CHECK FOR OPERATIONAL UDC-DH
900 11545 6356 UDRA
901 11546 0366 AND (377)
902 11547 7041 CIA
903 11550 1356 TAD CHANNO
904 11551 7640 SZA CLA
905 11552 5315 JMP DVCERR /DEVICE (IC8 OR UDC) NOT RESPONDING !!!
906 / MAY NOT EXIST OR POWERED DOWN OR "DOWN"
907 11553 6356 UDRA
908 11554 0365 AND (7400)
909 11555 5731 JMP I CHNLCK /RETURN WITH GENERIC CODE
910 11556 0000 CHANNO, 0
911
912 11557 0000 DRLADR, ZBLOCK 3
913 11562 0671 DERINT /POWER RECOVERY "DERAIL" ADDRESS
914
915 11565 7400
916 11566 0377
917 11567 7401
918 11570 1272
919 11571 1666
920 11572 1271
921 11573 1630
922 11574 1270
923 11575 1323
924 11576 0400
925 11577 6200
926 1600 PAGE
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927 11600 4202 ECAOP, JMS DECAST
928 11601 5777 JMP I GETFLG
929
930 11602 0000 DECAST, B /DISABLE+ENABLE CONTACTS
931 11603 4776 JMS I (ARG2
932 11604 3130 DCA T1 /GET BIT NO. + CHAN NO.
933 11605 1130 TAD T1
934 11606 0375 AND (7400
935 11607 3131 DCA T2 /BIT NO.
936 11610 1131 TAD T2
937 11611 7100 CLL
938 11612 1374 TAD (2000 /MUST BE L.T. 14
939 11613 7630 BZL CLA
940 11614 5773 JMP I (BADGC
941 11615 1131 TAD T2 /BIT NUM
942 11616 7000 RTL
943 11617 7000 RTL
944 11620 7004 RAL
945 11621 3131 DCA T2 /INTO LD 4 BITS
946 11622 1130 TAD T1
947 11623 4230 JMS CNTCK
948 11624 4266 JMS CINDEX
949 11625 1135 TAD TBLPTR
950 11626 3132 DCA AT2
951 11627 5602 JMP I DECAST
952
953 11630 0000 CNTCK, B /ADDR IN AC/RETURN WITH GC
954 11631 4257 JMS MASCHK
955 11632 7000 RTL
956 11633 7430 BZL /2 OR 3 ONLY
957 11634 5773 JMP I (BADGC
958 11635 7700 BMA CLA
959 11636 5773 JMP I (BADGC
960 11637 4243 JMS LIMCHK
961 11640 7776 =FCT=NCNTC
962 11641 0002 NCNTC
963 11642 5630 JMP I CNTCK
964
965 11643 0000 LIMCHK, B
966 11644 1643 TAD I LIMCHK
967 11645 2243 ISZ LIMCHK
968 11646 1130 TAD T1 /COMPARE UPPER TABLE LIMIT
969 11647 7500 SNA
970 11650 5772 JMP I (CHNNG
971 11651 1643 TAD I LIMCHK /AND LOWER LIMIT
972 11652 2243 ISZ LIMCHK
973 11653 7510 SPA
974 11654 5772 JMP I (CHNNG
975 11655 3130 DCA T1 /CHANNEL NO. (B=N)
976 11656 5643 JMP I LIMCHK

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977 11657 0000 MASCHK, B /ADDR IN AC
978 11660 0371 AND (377
979 11661 3130 DCA T1
980 11662 1130 TAD T1
981 11663 4770 JMS I (CHNLCK
982 11664 6001 ION
983 11665 5657 JMP I MASCHK
984
985 11666 0000 CINDEX, B /BIT NO. IN T2, CH, NO. IN T1
986 11667 1130 TAD T1
987 11670 7106 CLL RTL
988 11671 3135 DCA TBLPTR /USING IT AS A TEMP
989 11672 1130 TAD T1
990 11673 7004 RAL
991 11674 1135 TAD TBLPTR /NOW *6
992 11675 7006 RTL /*30
993 11676 3130 DCA T1
994 11677 1131 TAD T2 /BIT NO.
995 11700 7104 RAL CLL /+2
996 11701 1130 TAD T1
997 11702 1367 TAD (CNTCT0
998 11703 3135 DCA TBLPTR
999 11704 5666 JMP I CINDEX
1000
1001 11705 4202 DCADP, JMS DECAST
1002 11706 5316 JMP TWOFIL
1003
1004 11707 0000 MINUS1, B /MOVE POINTER BACK BY 1
1005 11710 7240 CLA CMA
1006 11711 3532 DCA I AT2
1007 11712 2132 ISZ AT2
1008 11713 5707 JMP I MINUS1
1009
1010 11714 4766 DCNTR, JMS I (CNTRST
1011 11715 4307 JMS MINUS1 /MUST DISABLE ALL WORDS
1012 /WORD 2 ACTUALLY CHECKED
1013 11716 4307 TWOFIL, JMS MINUS1
1014 11717 4307 JMS MINUS1
1015 11720 5534 JMP I ENDOP
1016
1017 11721 4776 ROCOS, JMS I (ARG2
1018 11722 4230 JMS CNTCK
1019 11723 1130 TAD T1
1020 11724 1365 TAD (DCOST0
1021 11725 3131 DCA T2
1022 11726 1531 TAD I T2 /GET LAST VALUE
1023 11727 5341 JMP SENDIT

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1024 11730 4776 GCOP, JMS I (ARG2
1025 11731 6002 IOF
1026 11732 6363 UDLA
1027 11733 6350 UDRA
1028 11734 6001 ION
1029 11735 8373 AND (7400 /RETURN GC
1030 11736 7106 CLL RTL
1031 11737 7006 RTL
1032 11740 7004 RAL
1033 11741 2136 SENDIT, ISZ ADDRUP
1034 11742 4142 JMS CDFM86
1035 11743 3536 DCA I ADDRUP
1036 11744 6211 CDF CUR
1037 11745 5534 JMP I ENDOP
1038
1039
1040
1041 11765 3223
1042 11766 2040
1043 11767 2200
1044 11770 1531
1045 11771 0377
1046 11772 1920
1047 11773 1521
1048 11774 2000
1049 11775 7400
1050 11776 1500
1051 11777 2014
1052 2000
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1053 12000 4240 ECNTR, JMS CNTRST
1054 12001 6002 IOF
1055 12002 3131 DCA T2
1056 12003 1777 TAD I (CHANNO
1057 12004 6363 UDLA
1058 12005 1131 TAD T2 /INIT VALUE
1059 12006 6367 UDLD
1060 12007 6363 UDLA /REENABLE COUNTER
1061 12010 6001 ION
1062 12011 4776 JMS I (ARG2 /GET RELOAD INFO
1063 12012 3532 DCA I AT2
1064 12013 2132 ISZ AT2
1065 12014 4776 GETFLG, JMS I (ARG2 /GET TASK NO.
1066 12015 3532 DCA I AT2
1067 12016 1532 TAD I AT2
1068 12017 7710 SPA CLA
1069 12020 5225 JMP EVFLGQ
1070 12021 2132 ISZ AT2 /RUN OR DERAIL
1071 12022 4776 JMS I (ARG2
1072 12023 3532 DCA I AT2 /ADDRESS
1073 12024 5534 JMP I ENDOP
1074
1075 12025 1532 EVFLGQ, TAD I AT2 /CHECK FOR ONCE ONLY
1076 12026 0375 AND (400
1077 12027 3532 DCA I AT2
1078 12030 1774 TAD I (MSGCDF /NEED FIELD AT DISPATCH TIME
1079 12031 0373 AND (77 /MUST PRESERVE LO 3 BITS AS 0
1080 12032 1532 TAD I AT2
1081 12033 3532 DCA I AT2 /HI 6*PART OF CDF
1082 12034 2132 ISZ AT2
1083 12035 1772 TAD I (SAVADR /NEED PTR TO EVENT FLAG
1084 12036 3532 DCA I AT2
1085 12037 5537 JMP I MOREIO
1086
1087 12040 0000 CNTRST, 0
1088 12041 4776 JMS I (ARG2
1089 12042 4246 JMS COUNCK
1090 12043 3132 DCA AT2
1091 12044 4776 JMS I (ARG2 /INIT VALUE
1092 12045 5640 JMP I CNTRST
1093
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1094 12046 0000 COUNCK, 0 JMS I (MASCCK /ADDR IN AC, RETURNS W COUNTER TBL PTR
1095 12047 4771 JMS I (MASCCK
1096 12050 7106 CLL RTL
1097 12051 7400 SNL
1098 12052 5770 JMP I (BADGC
1099 12053 7100 CLL
1100 12054 1367 TAD (2000
1101 12055 7630 SZL CLA /4=6 ONLY
1102 12056 5770 JMP I (BADGC
1103 12057 4766 JMS I (LIMCHK
1104 12060 7761 -FCTR=NCNTR
1105 12061 0001 NCNTR
1106 12062 1130 TAD T1
1107 12063 7104 RAL CLL
1108 12064 1130 TAD T1 /#3
1109 12065 1365 TAD (CNTTBL
1110 12066 5646 JMP I COUNCK
1111

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1112 12067 4776 AIOP, JMS I (ARG2
1113 12070 4320 JMS ADCCK
1114 12071 4776 JMS I (ARG2
1115 /SUBCHANNEL WORD PASSED AS:
1116 /BIT 0=ENABLE/1=3*GAIN
1117 /**** UDC ****
1118 /9=11=SUBCHAN/7=READ CNTRL REG
1119 /**** ICS ****
1120 /5=11=SUBCHAN/4=READ CNTRL REG
1120 12072 3131 DCA T2
1121 12073 1131 TAD T2
1122 IFDEF ICS <
1123 12074 0564 AND (177 /GET SUBCHANNEL
1124 >
1125 IFDEF UDC <
1126 AND (7 /GET SUBCHANNEL
1127 >
1128 12075 7104 RAL CLL
1129 12076 1132 TAD AT2 /ADD SUBCH*2 INTO TBL PTR
1130 12077 3132 DCA AT2
1131 12100 2136 ISZ ADDRUP
1132 12101 1774 TAD I (MSGCOF
1133 12102 3532 DCA I AT2 /FLD
1134 12103 2132 ISZ AT2
1135 12104 1136 TAD ADDRUP
1136 12105 3532 DCA I AT2 /ADDR
1137 12106 6002 IOF
1138 12107 1777 TAD I (CHANNO /MAJOR CHANNEL
1139 12110 6363 UDLA
1140 12111 1131 TAD T2 /GAIN,SUBCHANNEL WORD
1141 IFDEF ICS <
1142 12112 1363 TAD (10 /BIAS ADUS2 CONVERTER MULTIPLEXOR
1143 12113 0362 AND (3577
1144 12114 1361 TAD (4200 /FORCE ENABLE+READ CNTRL REG BITS
1145 >
1146 IFDEF UDC <
1147 AND (3757
1148 TAD (4020 /FORCE ENABLE+READ CNTRL REG BITS
1149 >
1150 12115 6367 UDLD /NO TIME TO WAIT TIL DONE SO LOAD
1151 /SUBCHAN + CATCH IT THRU INTERRUPTS
1152 12116 6001 IDN
1153 /***** START MODULE TIME-OUT *****/
1154 12117 5537 JMP I MDREIO

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1155
1156 12120 0000 ADCHK, 0
1157 12121 4771 JMS I (MASCCHK
1158 12122 7104 CLL RAL
1159 12123 1360 TAD (1000 /CHECK GC
1160 12124 7620 SNL CLA
1161 12125 5770 JMP I (BADGC /ONLY 7
1162 /***** A/D MAY BE NON-CONTIGUOUS *****/
1163 /***** BUT MUST BE "ADJACENT" *****/
1164 12126 4766 JMS I (LIMCHK
1165 12127 7760 =FAD=DELTA
1166 12130 0020 DELTA
1167 IFDEF ICS <
1168 12131 3132 DCA AT2 /CLEAR FOR CHANNEL CONV.
1169 12132 1130 TAD T1 /"CHANNEL #
1170 12133 1357 TAD (=NMPLX-1
1171 12134 7510 SPA
1172 12135 5340 JMP ,+3
1173 12136 2132 ISZ AT2
1174 12137 5333 JMP ,+4
1175 12140 7300 CLA CLL
1176 >
1177 IFDEF UDC <
1178 12141 1132 TAD T1
1179 12142 7300 DCA AT2
1180 >
1181 /*****
1182 /*****
1183 12141 1132 TAD AT2 /CHANNEL DISPLACEMENT INTO ANALOG INPUT TABLE
1184 12142 7040 CHA /SET UP LOOP COUNTER
1185 12143 3132 DCA AT2 /SCRATCH AREA
1186 12144 2132 ISZ AT2 /TEST COUNT
1187 12145 7410 SKP / NO -EXIT YET
1188 12146 5351 JMP ,+3 / YES - EXIT NOW
1189 12147 1354 TAD ADTBLD /ADD TABLE DISPLACEMENT
1190 12150 5344 JMP ,+4
1191 12151 1356 TAD (ADTBL /ADD BASE OF TABLE
1192 12152 3132 DCA AT2
1193 12153 5720 JMP I ADCHK
1194 12154 0360 ADTBLD, NMPLX*40+20
1195 12156 2263
1196 12157 7770
1197 12160 1000
1198 12161 4200
1199 12162 3577
1200 12163 0010
1201 12164 0177
1202 12165 2260
1203 12166 1643
1204 12167 2000
1205 12170 1521
1206 12171 1657
1207 12172 0641
1208 12173 0077
1209 12174 0143
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1210 12175 0400
1211 12176 1506
1212 12177 1556
1213 12178 2200 PAGE
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1214 CNTCTB,
1215 /CONTACT TABLE
1216 /30 WORDS/CHANNEL IN PAIRS, ORDERED FROM HI TO LO BIT
1217 /WORD 1 = ACTION + TASK NO., BIT 3=REPEAT FLAG
1218 / FOR EV, FLAG, LO 3 00, HI 6=PART OF CDP
1219 /WORD 2 = ADDRESS
1220 /7777 = DISABLED OR NEVER ENABLED
1221
1222 2260 CNTTBL=NCNTC*30+CNTCTB
1223 /COUNTER TABLE, 3 WORDS/CHANNEL
1224 /WORD 1 = RELOAD VALUE
1225 /WORD 2 = ACTION + TASK
1226 /WORD 3 = ADDRESS
1227
1228 2263 ADTBL=NCNTR*3+CNTTBL
1229 /A/D TABLE, 16 WORDS/CHANNEL
1230 /2 WORDS/SUBCHANNEL
1231 / UOC
1232 / 8 SUBCHANNELS/UDC CHANNEL
1233 / ICS
1234 / 8 SUBCHANNELS/ICS CONVERTER MODULE
1235 / 16 SUBCHANNELS/ICS MULTIPLEXOR MODULE
1236 /WORD 1= FIELD
1237 /WORD 2= ADDRESS TO PASS ANS TO
1238
1239 0360 AORCAL=NMPLX*80+20
1240 0740 ADRCAL=ADRCAL*NAO
1241 3223 DCOSTB=AORCAL+ADTBL
1242 /CHANGE OF STATE TABLE
1243 /1 WORD/CONTACT CHANNEL
1244 /INITIALIZED AT MORINT
1245
1246 3225 ENOUDC=DCOSTB*NCNTC
1247 IFZERO ENOUDC=,640000<
1248 12200 0000 ZBLOCK ENOUDC=,
1249
1250

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AC0002 7326 DFLG 1422 NCNTC 0002 SAVEWD 1047
AC2000 7332 DF32 0012 NCNTR 0001 SENO 0000
AC3777 7350 010P 1462 NEGIT 0724 SENDIT 1741
AC4000 7330 DISPTH 1272 NETHT 0010 SENOW 0011
AC7775 7346 ONENT 0001 NMPLX 0007 SEVFLG 1400
AC7776 7344 OODP 1473 NOCNTC 1077 SHERTZ 0074
ADCHK 2120 OORING 1202 NOMORE 1073 SKPINS 0006
ADDRUP 0136 ORLADR 1557 NONRWT 4000 START 0663
ADFLD 1146 OTA 0007 NOTRUB 1233 SUNIT 0000
ADINT 1130 DVCERR 1515 NOTSET 1434 SUSPND 0004
ADRCAL 0740 EADR 1321 NTASKS 0023 SHAPPE 0021
ADTBL 2263 EAE 0001 OKDUT 1221 SHPMT 0400
ADTBLD 2154 ECADP 1600 OKPTR 1063 SYS 0010
ADP 2067 ECHTR 2000 OLOCT 1072 TASK 0016
ANIEXT 0733 EPCDF 1407 ONEZER 1129 TBLOUT 1201
ADOP 1473 EFMT 2000 OPCODE 0012 TBLPTR 0135
ARG2 1506 ENABWT 0040 OPTBL 0626 TBLWD1 1270
AT2 0132 END 0737 OSFILL 0004 TBLWD2 1271
BADGC 1521 ENDDIS 1410 OSFLOS 0002 TFTABL 1367
BADOP 1517 ENODP 0134 OSKROV 0030 TOOH 0037
BITCNT 1460 ENOUDC 3225 OSSYSD 0010 TOOL 0036
BLKARG 0010 EORMWT 0200 OSTTDOV 0031 TSTABL 1244
CAL 4020 ERRNMB 0141 DSA 0023 TSWFLG 0035
CALADR 0602 EVFLGQ 2025 Q80F 0020 TTY 0003
CCHNO 1461 FAD 0000 PARTBL 1420 THDFIL 1716
CDFMSG 0142 FCT 0000 PARTNS 0000 T1 0130
CHANNO 1556 FCTR 0016 POP12 0000 T2 0131
CHECKP 0001 FREE 4000 PDP8E 0001 UDCEV 0662
CHNLCK 1531 GCOP 1730 POSCDF 0755 UOCINT 1000
CHNNG 1520 GCO 1500 PDST 0005 UDCMOR 0642
CINDEX 1666 GENERL 0713 POSTOS 5424 UDCSKP 1002
CLKQLN 0020 GETFLG 2014 PWRF 0002 UDDI 6365
CLKTYP 0000 GOTHAL 0600 PWRFAL 0001 UDEI 6364
CLOCK 0001 HERTZ 0170 RDCNTR 1324 UOLA 6363
CNTCK 1630 MGHFLD 0030 RDCOS 1721 UDLO 6367
CNTCTB 2200 ICS 0016 READCH 1463 UOLS 6357
CNTRST 2040 INITLP 0703 RECEIV 0001 UDRA 6356
CNTTBL 2260 INIWT 0000 REENAB 1200 UDRO 6366
COMMAN 0043 INT1 1123 RESTBL 1414 UDRS 6355
CONASB 0001 INT2 1124 RF08 0011 UDSC 6353
CONAC 1423 K7000 1126 RGORCH 1530 UDSC 6361
COUNCK 2046 LIMCHK 1643 RINGBF 0012 UDSS 6351
COUNTR 1241 LPT 0004 RINGBT 1333 UNBARG 0012
CSA 0013 LTA 0006 RINGCT 0133 USERMT 0100
CSAF 0014 MASCHK 1657 RINGDN 0140 WAITE 0002
CUR 0010 MCR 0005 RINGPT 1122 WAITH 4425
DATE 0040 MCREF 0041 RINGTP 1356 ZROTWO 1312
DCANP 1705 MCRSYS 0001 RKB 0010
DCNTR 1714 MINUS1 1707 RNGEND 1266
DCOSTB 3223 MORCHK 1014 ROTATE 1452
DDSPTH 1323 MOREIO 0137 ROTWD 1457
DECAST 1602 MSGCDF 0143 RUN 0003
DELTA 0020 MSGTBL 1176 RUNWT 1000
DETRIL 0007 MSGWT 0020 RX8A 0017
DERINT 0071 NAD 0002 SAVADR 0641

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417

418

DECAST	927	930#	951	1001					
DELTA	240	241#	241	1165	1166				
DERAIL	129#	745							
DERINT	416#	913							
DFLG	725	747	802	803	805	807#			
DF32	73#								
DIOF	378	842#							
DISPTH	717	723#	748	833					
DNEWT	149#								
DOOP	377	853#							
DORING	391	865#							
ORLADR	412	912#							
DTA	69#								
DVCERR	874#	905							
EADDR	742	746#							
EAE	50#								
ECAOP	383	927#							
ECNTR	380	1053#							
EFCOF	788	793#							
EFMT	141#								
ENABWT	146#								
END	342	457#							
ENDDIS	738	747	797#						
ENDUP	342#	850	857	884	1015	1037	1073		
ENDUDC	1246#	1247	1248						
EORHWT	144#	402							
ERRNMB	347#	358	461	873	874	875	876	877	878
EVFLG	1069	1075#							
FAD	235#	1165							
FCT	245#	424	523	961					
FCTR	242#	1184							
FREE	133#								
GCOP	379	1024#							
GCO	842	853	859#	864					
GENERL	420	434#							
GETFLG	928	1065#							
GOTMAL	354#	395							
HERTZ	97#								
HGHFLD	52#								
ICS	76#	225	229	229	567	876	811	822	1122 1141
INITLP	1167	426#	433						
INIWT	179	238#							
INT1	524	525	528	573	589	684#			
INT2	526	529	685#						
K7000	688#								
LIMCHK	968	965#	966	967	971	972	976	1103	1164
LPT	66#								
LTA	68#								
MASCHK	954	977#	983	1095	1157				
MCR	67#	90							
MCREF	167#								
MCRSYS	91#								
MINUS1	1004#	1008	1011	1013	1014				
MORCHK	504#	538	543	609					
MOREIO	345#	707	719	1085	1154				
MSGCDF	350#	357	452	465	1070	1132			
MSGTBL	152#	153	172	393					
MSGWT	147#								
NAD	237#	241	1240						

419

NCNTC	247#	418	961	962	1222	1246			
NCNTR	244#	1104	1105	1228					
NEGIT	444#	448							
NETWT	148#								
NHPLX	238	239#	240	1170	1194	1239			
NOCNTC	518	562#							
NOMORE	500	558#							
NOTRUB	685	698#							
NOTSET	818#	838							
NTASKS	53#	70	153	155	158	159			
OKOUT	677	680#							
OKPTR	506	544#							
OLDCT	502	544	554#						
ONEZER	520	607#							
OPCODE	252#	368	371						
OPTBL	371	376#							
OSPILL	88#								
OSFLOS	84#								
OSKBDV	85#								
OSSYSD	87#								
OSTTDV	86#								
O80	78#	83							
OS8F	79#								
PARTBL	159#								
PARTNS	55#								
POP12	49#								
PDP8E	48#								
POSCDF	466	471#							
POST	127#	470	792						
POSTOS	117#	553	561						
PWRP	64#	400	411						
PWRFAL	51#								
RDCNTR	381	750#							
RDCOS	384	1017#							
READCH	756	843#							
RECEIV	123#	355							
REENAB	558	661#	683	686	757				
RESTBL	158#	159							
RF08	72#								
RGORCM	639	666	718	881	885#				
RINGBF	253#	497	757	757	765				
RINGBT	436	438	540	678	765#				
RINGCT	341#	389	434	498	501	513	514	546	607 688
RINGON	346#	810	820	883					
RINGPT	437	511	515	521	531	532	534	535	542 566
	590	603#							
RINGTP	536	674	766#						
RKA	71#	87	182						
RNGEND	346	718#							
ROTATE	822	834#							
ROTWD	816	818	835	837	839#				
RUN	125#	737							
RUNWT	142#								
RX8A	77#								
SAVADR	368	387#	455	458	468	1083			
SAVEWD	531#	565	601						
SEND	122#	410							
SENDIT	1023	1033#							
SENDW	131#								
SEVFLG	740	786#							

420

421

422

12156	1191				
12157	1170				
12160	1159				
12161	1144				
12162	1143				
12163	1142				
12164	1123				
12165	1109				
12166	1103	1164			
12167	1100				
12170	1090	1102	1161		
12171	1095	1157			
12172	1083				
12173	1079				
12174	1074	1132			
12175	1076				
12176	1062	1065	1071	1088	1091 1112 1114
12177	1056	1130			

V3

423

/PARAMETERS FOR RTS=8 TASKS (VERSION PAL8-V9D 09/11/75 PAGE 1

1	/PARAMETERS FOR RTS=8 TASKS (VERSION 2)
2	/
3	/
4	/
5	/
6	/
7	/
8	/
9	/
10	/
11	/COPYRIGHT (C) 1974,1975 BY DIGITAL EQUIPMENT CORPORATION
12	/
13	/
14	/
15	/
16	/
17	/
18	/
19	/
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35	/
36	/
37	/
38	/
39	/
40	/
41	/
42	/
43	/
44	/

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45
46      /RTS8 V2 EXEC PARAMETERS - EDITED BY USER
47
48      0001 PDP8E=1
49      0002 PDP12=0
50      0001 EAE=1
51      0001 PWRFAL=1
52      0030 MGHFLO=30
53      0023 NTASKS=23
54      0001 CHECKPT=1
55      0000 PARTNS=0
56
57      / (THE N PARTITIONS ARE NUMBERED FROM 0 TO N-1)
58
59      /COMMON TASK NUMBERS - EDITED BY USER
60      /IT IS ADVISABLE TO DEFINE ALL TASKS HERE, NAMES GIVEN BELOW
61      /ARE USED BY SOME SYSTEM TASKS AND SHOULD BE DELETED FROM THIS
62      /LIST IF THE CORRESPONDING TASK IS NOT INCLUDED IN THE SYSTEM
63
64      0001 CLOCK=1
65      0002 PWRF02
66      0003 TTY=3
67      0004 LPT=4
68      0005 MCR=5
69      0006 LTA=6
70      0007 DTA=7
71      0021 SWAPPER=21
72      0010 RK0=10
73      0011 RFB0=11
74      0012 DF32=12
75      0013 CSA=13
76      0014 CSAF=14
77      0016 ICS=16
78      0017 RX0A=17
79      0023 OS0=NTASKS
80      0020 OS0F=20
81
82      /SOFTWARE PARAMETERS - EDITED BY USER
83
84      0002 OSFLDS=2
85      0030 OSKSDV=30
86      0031 OSOTTOV=31
87      0010 OSBYSD=RK0
88      0004 OSFILL=4
89
90      >
91      0001 MCRSYS=1
92      >
93      0000 CLKTYPE=0
94      0020 CLKQLN=20
95      DECIMAL
96
97      0170 HERTZ=120
98      0074 SHERTZ=00
99      OCTAL

```

425

```

100      >
101      IFDEF SHAPPER <
102      0010 SYS=RK0
103      0000 SUNIT=0
104      >

```

426

```

105      /EQUIVALENCES:
106
107      7344 AC7776= CLL STA RAL
108      7346 AC7775= CLL STA RTL
109      7330 AC4880= CLA STL RAR
110      7350 AC3777= CLL STA RAR
111      7332 AC2888= CLA STL RTR
112      7326 AC8882= CLA STL RTL
113
114      /MONITOR CALL VALUES:
115
116      4020 CAL= JMS 20 /CALL THE EXECUTIVE
117      3424 POSTD= JMP I 24 /DISMISS AN INTERRUPT
118      4423 WAITM= JMS I 25 /WAIT FOR MULTIPLE EVENTS
119
120      /NOTE: "*" MEANS CRITICAL VALUE MAY NOT
121      /BE CHANGED WITHOUT MODIFYING SYSTEM CODE!!
122      0000 SEND= 0 /SEND MESSAGE
123      0001 RECEIV= 1 /RECEIVE MESSAGE
124      0002 WAITE= 2 /WAIT FOR EVENT FLAG
125      0003 RUN= 3 /CONTINUE TASK EXECUTION
126      0004 SUBPND= 4 /SUSPEND TASK EXECUTION
127      0005 POST= 5 /POST AN EVENT FLAG
128      0006 SKPIN= 6 /INSERT CODE INTO INTERRUPT SKIP CHAIN
129      0007 DERRAIL= 7 /INITIATE END-ACTION
130      0010 BLKARG= 10 /BLOCK TASK FOR REASON SPECIFIED IN ARG
131      0011 SENDM= 11 /SEND MESSAGE AND WAIT
132      0012 UNBARG= 12 /UNBLOCK TASK FOR REASON SPECIFIED IN ARG
133      4000 FREE= 4000 /*FREE PARTITION
134
135      IFDEF UDC
136      <AD=8;DO=1;DI=2;GC=3;EC=4;RC=5
137      DC=6;ECT=7;CS=10;DCT=11;AI=12>
138
139      /TASK STATUS FLAGS:
140      4000 NONRWT= 4000 /*NONRESIDENT TASK WAIT
141      2000 EFHT= 2000 /EVENT FLAG WAIT
142      1000 RUNWT= 1000 /SCHEDULE WAIT
143      0400 SWPHT= 0400 /*SWAPPER WAIT
144      0200 EORNWT= 0200 /EVENT FLAG OR MESSAGE WAIT
145      0100 USERWT= 0100 /USER SPECIFIED WAIT
146      0040 ENABWT= 0040 /ENABLE WAIT
147      0020 MSGWT= 0020 /MESSAGE WAIT
148      0010 NETWT= 0010 /NETWORK WAIT (RESERVED FOR POSSIBLE FUTURE USE)
149      0001 DNEWT= 0001 /*DOES NOT EXIST WAIT

```

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```

150      /SYSTEM LOCATIONS:
151
152      1176 MSGTBL= 1200+2 /TASK MESSAGE TABLE
153      1244 TSTABL= NTASKS+2*2+MSGTBL-4 /TASK STATE TABLE = HOLDS
154      1367 TPTABL= NTASKS+2*4+TSTABL-1 /TASK LINK,UN,DP,IF,PC,AC,MQ
155      /TASK FLAGS TABLE = HOLDS
156      /TASK STATUS FLAGS
157
158      IFDEF SWAPPER <
159      1414 RESTBL= TPTABL+NTASKS+2 /RESIDENCY TABLE
160      1420 PARTBL= NTASKS+SWAPPER*2+RESTBL+3&7774 /PARTITION TABLE
161      0043 COMMAND= 43 /SWAPPER COMMAND BUFFER
162
163      0035 TSHFLG= 35 /TASK SW INHIBIT FLAG IN FIELD 0
164      0036 TODL= 36 /LOW ORDER TIME OF DAY IN FIELD 0
165      0037 TODH= 37 /HIGH ORDER TIME OF DAY IN FIELD 0
166      0040 DATE= 40 /DATE IN OBS FORMAT IN FIELD 0
167      0041 MCREP= 41 /MCR START EVENT FLAG IN FIELD 0
168

```

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```

169 /TASK TABLE SETUP = "TASK", "CUR", "ININT", AND "START"
170 /MUST BE DEFINED BY TASK
171
172 1200 1200 *TASK*2+MSGTBL
173 01200 0000 ZBLOCK 2 /MESSAGE BUFFER INITIALLY CLEAR
174 1250 1250 *TASK*4+TSTABL
175 01250 0000 CURX18+CUR /INITIAL FLAGS
176 01251 2600 START
177 01252 0000 0 /INITIAL AC 0
178 1370 1370 *TASK*TFITABL
179 01370 0000 ININT

```

429

```

180 /CLOCK HANDLER FOR RTS8 V2 8/30/74
181 /
182 /
183 /
184 /
185 /
186 /
187 /
188 /
189 /
190 /COPYRIGHT (C) 1974,1975 BY DIGITAL EQUIPMENT CORPORATION
191 /
192 /
193 /
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222 /
223 /

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224
225 /THE RTS8 CLOCK HANDLER ACCEPTS MESSAGES FROM THE USER AND INSERTS
226 /ENTRIES INTO A CLOCK QUEUE. AS ENTRIES IN THE CLOCK QUEUE BECOME
227 /DUE, THEY ARE REMOVED FROM THE QUEUE AND THE REQUEST IS DECODED
228 /AND EXECUTED.
229
230 /THE CLOCK HANDLER MUST RUN IN FIELD 0 AS IT IS TREATED SPECIALLY
231 /BY THE INTERRUPT CODE IN RTS8
232
233 /THE FORMAT OF CLOCK MESSAGES ARE:
234
235 /WORD 1 USED AS EVENT FLAG FOR MESSAGE
236 /WORDS 2-3 USED BY RTS8
237 /WORD 4 COMMAND WORD - BITS ARE:
238 /   BITS 0-2 FUNCTION:
239 /       0 = SET EVENT FLAG AFTER TIMED INTERVAL
240 /       1 = RUN SPECIFIED TASK AFTER INTERVAL
241 /       2 = DERAIL SPECIFIED TASK AFTER INTERVAL
242 /       3 = RUN SPEC, TASK PERIODICALLY AFTER INTERVAL
243 /       5,6, OR 7 = CANCEL ALL TIMED REQUESTS FOR SPECIFIED TASK
244 /
245 /   BITS 5-11 SPECIFY TASK - 0 MEANS TASK IS SENDING TASK
246 /WORD 5 HIGH ORDER OF TIME (IN TICKS)
247 /WORD 6 LOW ORDER OF TIME
248 /WORDS 7-8(OPT) DERAIL ADDRESS OR RESCHEDULE PERIOD
249
250 /FORMAT OF CLOCK QUEUE ENTRY:
251
252 /WORD 1 POINTER TO NEXT ENTRY (0 IF LAST)
253 /WORD 2 AND 3 NUMBER OF TICKS FROM PREV ENTRY UNTIL THIS ONE -
254 /   NUMBER IS NEGATIVE, LOW ORDER IN WORD 2
255 /WORD 4 COMMAND WORD (FROM MESSAGE)
256 /WORD 5 AND 6 WORDS 7 AND 8 OF MESSAGE (ADDR OF MESSAGE IF FN=0)

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257 /THIS CLOCK HANDLER WILL RUN ON MANY HARDWARE CONFIGURATIONS
258 /THE PARAMETER "CLKTYP" CONTROLS THE CONFIGURATION
259 /LEGAL VALUES OF CLKTYP ARE:
260
261 /   0 OK8EA LINE CLOCK, OK8EC CRYSTAL CLOCK
262 /   1 KW12A PROGRAMMABLE CLOCK
263 /   2 PDP 8/A CLOCK (INCLUDED ON OPTION BOARD 1 OF PDP8A)
264 /   3 OK8EP PROGRAMMABLE CLOCK
265 /   4,6,10,ETC USER-DEFINED CLOCK TYPES
266
267 /VARIOUS CLOCK IOT DEFINITIONS:
268
269 IFZERO CLKTYP 4
270 6133 CLSK= 6133
271 6131 CLEI= 6131
272 6132 CLOI= 6132
273 >
274 IFNZRO CLKTYP&1 4 /KW12 AND OK8EP IOT'S
275 6130 CLZE= 6130 /OK8EP ONLY!
276 6131 CLSK= 6131
277 6132 CLLR= 6132 /CALLED CLOE ON OK8EP
278 6133 CLAB= 6133
279 6134 CLEN= 6134
280 6135 CLSA= 6135
281 >
282 IFZERO CLKTYP=2 4
283 6135 CLEN= 6135 /PDP 8/A CLOCK INTERRUPT ENABLE
284 6136 CLCL= 6136 /PDP 8/A CLOCK FLAG CLEAR
285 6137 CLSK= 6137 /PDP 8/A CLOCK SKIP
286 >
287 IFNZRO CLKTYP&1 <HERTZ= 1750> /FORCE OK8EP,KW12 TO 1 KHZ
288
289 0002 TICKS= HERTZ*SHERTZ
290
291 IFNZRO TICKS*SHERTZ=HERTZ <RATERR,_ERROR_>
292 IFZERO SHERTZ=300&4000 <TODERR,_ERROR_>
293
294 /CLOCK TASK PARAMETERS:
295
296 0001 TASK= CLOCK
297 0000 INIW= 0
298 0000 CUR= 0 /** MUST RUN IN FIELD 0! **
299
300 0000 FIELD 0
301 0010 *10 /AUTO XR = NO-ONE ELSE SHOULD USE!
302 0010 /MARK XR USED ON BITMAP
303 00010 0000 CLKXR, 0

```

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```

304 /THIS IS THE CLOCK QUEUE CREATOR - IT IS INVOKED WHEN THE CODE
305 /AT "CLKLP" NOTICES THAT THE INPUT MESSAGE QUEUE IS NON-EMPTY.
306
307 IFNDEF SWAPPER <
308 ENDEXC= NTASKS+1*7+1280 /ORIGIN JUST ABOVE SWAPPER, IF ANY
309 >
310 IFDEF SWAPPER <
311 ENDEXC= PARTN*4+PARTBL*37787600 /ELSE JUST ABOVE EXEC TABLES
312 >
313 2200 *ENDEXC
314 2200 PAGE /START LOADING IN FIRST PG AFTER TABLES OR SWAPPER
315
316 02200 4020 GETHSG, CAL /GET MESSAGE ADDRESS
317 02201 0001 RECEIV
318 02202 0000 MADDR, 0
319 02203 3204 DCA MSGCDF /CDF IS IN AC ON RETURN
320 /INITIALIZED IN CASE FUNCT IS "SET E,F,"
321 02204 7402 XTRA1, HLT /SET TO DF OF MESSAGE
322 02205 7346 MSGCDF, AC7775 /SAVE ADDRESS OF MESSAGE EVENT FLAG
323 02206 1202 TAD MADDR /IN XTRA2 = XTRA1&2 ARE NOW SET UP
324 02207 3371 DCA XTRA2 /IN CASE COMMAND WAS "SET EVENT FLAG"
325 02210 1602 TAD I MADDR /GET COMMAND
326 02211 0377 AND (177)
327 02212 7650 SNA CLA /CHECK FOR EXPLICIT TASK ARGUMENT
328 02213 1771 TAD I XTRA2 /NONE = USE SENDING TASK
329 02214 0377 AND (177) /MESSAGE E,F, MAY HAVE 4800 BIT DN)
330 02215 1602 TAD I MADDR
331 02216 3372 DCA CLKCMD /SAVE CLOCK COMMAND
332 02217 1204 TAD MSGCDF
333 02220 3245 DCA CT /SET UP CDF OF EVENT FLAG IN "POST" CALL
334 02221 1202 TAD MADDR
335 02222 3010 DCA CLKXR /SET UP AUTO=XR FOR FETCHING ARGS
336 02223 1410 TAD I CLKXR /GET HIGH ORDER INTERVAL
337 02224 3366 DCA TH /SAVE IT
338 02225 1410 TAD I CLKXR /GET LOW ORDER INTERVAL
339 02226 7450 SNA /IF ZERO, MAKE IT 1 - THIS INTRODUCES A SMALL
340 02227 7001 IAC /ELIMINATES THE KILLER 0 INTERVAL, BUT
341 02230 3367 DCA TL /ELIMINATES THE KILLER 0 INTERVAL
342 02231 1372 TAD CLKCMD /GET COMMAND
343 02232 7006 RTL
344 02233 7720 SNL SNA CLA /CHECK FOR "SET EVENT FLAG" COMMAND
345 02234 5246 JMP NDIHEF /YES = SO DON'T SET EVENT FLAG NOW
346 02235 1410 TAD I CLKXR /GET TWO MORE ARGUMENTS EVEN THOUGH WE
347 02236 3204 DCA XTRA1 /ONLY NEED THEM FOR COMMANDS 2 AND 3.
348 02237 1410 TAD I CLKXR
349 02240 3371 DCA XTRA2
350 02241 7346 AC7775 /WE MUST FIGURE OUT WHERE THE
351 02242 1202 TAD MADDR /MESSAGE STARTED SINCE WE DESTROYED XTRA2
352 02243 4020 CAL
353 02244 0005 POST
354 02245 0000 CT, 0
355
356 02246 4250 NDIHEF, JMS CLOINS /NOW INSERT THE MESSAGE INTO THE CLOCK QUEUE
357 02247 5776 JMP I {CLKLP

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433

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358 /SEARCH THE CLOCK QUEUE TO FIND WHERE TO PUT THIS REQUEST
359
360 /THE REQUEST TO BE QUEUED SHOULD BE IN THE WORDS:
361 /CLKCMD, TH, TL, XTRA1, XTRA2
362
363 02250 0000 CLQINS, 0
364 02251 6201 CDF CUR
365 02252 1375 TAD (CLO
366 02253 3370 DCA CQ
367 02254 1770 TAD I CQ /GET NEXT QUEUE ENTRY
368 02255 3245 DCA CT
369 02256 1245 TAD CT
370 02257 3010 DCA CLKXR /ACCESS BODY OF QUEUE ENTRY WITH AUTO=XR
371 02260 1645 TAD I CT
372 02261 7100 CLL /INHIBIT INTS WHILE LODGING AT 0 ENTRY
373 02262 6002 IOF /TO KEEP IT FROM CHANGING ON US,
374 02263 7650 SNA CLA /IS IT THE TERMINAL ONE?
375 02264 5323 JMP INHERE /YES = INSERT HERE
376 02265 1410 TAD I CLKXR
377 02266 1367 TAD TL
378 02267 3374 DCA TTL /SUBTRACT INTERVAL TO THIS QUEUED EVENT
379 02270 1372 TAD CLKCMD /IF COMMAND IS NEGATIVE,
380 02271 7710 SNA CLA /THIS IS NOT A REGULAR COMMAND BUT A CANCEL -
381 02272 5311 JMP KILLQE /CHECK WHETHER WE SHOULD CANCEL THIS 0 ENTRY
382 02273 1410 TAD I CLKXR /FROM INTERVAL TO THE CURRENT REQUEST
383 02274 7450 SNA /MATCH FOR 0 INTERVAL = SCREWS UP LINK
384 02275 5306 JMP NULADD /NULL INTERVALS DON'T AFFECT SEARCH
385 02276 7430 SZL
386 02277 7101 CLL IAC /ADD IN CARRY AFTER ZERO TEST!
387 02300 1366 TAD TH
388 02301 7420 SNL /IF THE REQUEST OCCURS BEFORE THE CURRENT
389 02302 5323 JMP INHERE /QUEUE ENTRY, BREAK THE QUEUE HERE
390 02303 3366 DCA TH
391 02304 1374 TAD TTL /SINCE QUEUED INTERVALS ARE CUMULATIVE,
392 02305 3367 DCA TL /USE THE UPDATED INTERVAL FROM NOW ON
393 02306 0001 NULADD, ION /ALLOW INTERRUPTS BETWEEN ENTRIES
394 02307 1245 TAD CT
395 02310 5253 JMP QSRCLP /GO TO NEXT QUEUE ENTRY
396
397 02311 7326 KILLQE, AC0002
398 02312 1010 TAD CLKXR
399 02313 3202 DCA MADDR /POINT AT COMMAND WORD OF QUEUE REQUEST
400 02314 1602 TAD I MADDR
401 02315 7041 CIA /COMPARE TASK NUMBER IN QUEUE ENTRY COMMAND
402 02316 1372 TAD CLKCMD /TO SPECIFIED TASK
403 02317 0377 AND (177) /ONLY 7 BITS TO COMPARE
404 02320 7650 SNA CLA /WELL?
405 02321 3602 DCA I MADDR /MATCH - ZERO COMMAND WD (0 COMMAND IS NOP)
406 02322 5306 JMP NULADD

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407 /FOUND WHERE IT GOES - NOW PUT IT THERE
408
409 02323 3202 INHERE, DCA MAOOR /SAVE HIGH ORDER OF DIFFERENCE
410 02324 1372 TAD CLKCMD
411 02325 7710 SPA CLA /IF THIS WAS A CANCEL COMMAND,
412 02326 5776 JMP I (CLKLP /WE ARE DONE - DON'T INSERT ANYTHING.
413 02327 1373 TAD CLF
414 02330 3770 DCA I CG /LINK THE FIRST ENTRY ON THE FREE LIST
415 02331 7240 STA /INTO THE QUEUE AT THIS POINT
416 02332 1373 TAD CLF /USE XR TO SET UP NEW ENTRY
417 02333 3010 DCA CLKXR
418 02334 1773 TAD I CLF /REMOVE FREE LIST ENTRY
419 02335 3373 DCA CLF /FROM FREE LIST
420 02336 1245 TAD CT /COMPLETE THE INSERTION BY SETTING UP
421 02337 3410 DCA I CLKXR /THE POINTER TO THE NEXT QUEUE ENTRY
422 02340 1367 TAD TL /PUT THE NEGATIVE OF THE INTERVAL
423 02341 7141 CIA CLL /UNTIL THIS ENTRY IS EXECUTABLE INTO
424 02342 3410 DCA I CLKXR /THE NEW QUEUE ENTRY, LOW ORDER
425 02343 7024 CML RAL /WORD FIRST (FOR EASY INCREMENTING)
426 02344 6001 ION /FINISHED DBL-PREC ARITHMETIC - ALLOW INTS
427 02345 1366 TAD TM
428 02346 7041 CIA
429 02347 3410 DCA I CLKXR
430 02350 1372 TAD CLKCMD
431 02351 3410 DCA I CLKXR /PUT COMMAND WORD IN QUEUE ENTRY
432 02352 1204 TAD XTRA1
433 02353 3410 DCA I CLKXR /AND EXTRA WORDS FOR COMMAND
434 02354 1371 TAD XTRA2
435 02355 3410 DCA I CLKXR
436 02356 2245 ISZ CT /NOW UPDATE THE FOLLOWING ENTRY
437 02357 1374 TAD TTL /TO REFLECT THE REDUCED NUMBER
438 02360 3645 DCA I CT /OF TICKS BETWEEN ENTRIES
439 02361 2245 ISZ CT
440 02362 1202 TAD MAOOR /** WE MAY BE "UPDATING" ZROENT **
441 02363 3645 DCA I CT /** WE NEED TWO SCRATCH LOCS AFTER ZROENT **
442 02364 5650 JMP I CLGINS /RETURN
443
444 02365 0000 ZROENT, 0 /PERMANENT FINAL ENTRY IN CLOCK QUEUE
445 02366 0000 TM, 0 /TH AND TL ALSO SERVE AS THE FIRST TWO
446 02367 0000 TL, 0 /WORDS OF "ZROENT"
447 02370 0000 CG, 0
448 02371 0000 XTRA2, 0
449 02372 0000 CLKCMD, 0
450 02373 2400 CLF, BEGPRE /INITIALIZED TO BEGINNING OF FREE LIST
451 02374 0000 TTL, 0
452 02375 2551
453 02376 2403
454 02377 0177
455 02378 2400 PAGE

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456 /MAIN CLOCK HANDLER LOOP - SEE IF ANYTHING TO DO
457
458 02400 4001 CLKEF, 4000+TASK /SIGNIFICANT TICK EVENT FLAG
459
460 02401 4425 CLKWT, WAITM /SPECIAL MONITOR ENTRY TO WAIT
461 02402 0200 EORMWT /FOR EVENT FLAG OR MESSAGE,
462 02403 6002 CLKLP, IOP /INTERRUPTS OFF FOR DELICATE CODE
463 02404 1200 TAD CLKEF
464 02405 7650 SNA CLA /SIGNIFICANT TICK?
465 02406 5216 JMP GETICK /YES - PROCESS IT
466 02407 1777 TAD I (CLF
467 02410 7640 SZA CLA /ANY ROOM IN CLOCK QUEUE?
468 02411 1776 TAD I (TASK*2+MSGTBL /YES - CONSIDER MESSAGES
469 02412 7650 SNA CLA /CAN WE TAKE A MESSAGE?
470 02413 5201 JMP CLKWT /NO - GO INTO EORMWT
471 02414 6001 ION /YES - RESTORE INTERRUPTS
472 02415 5775 JMP I (GETMSG /AND GO RECEIVE MESSAGE
473
474 02416 1374 GETICK, TAD (4000+TASK /RESET EVENT FLAG
475 02417 3200 DCA CLKEF /TO "WAITING" STATE
476 02420 6001 ION /TURN INTERRUPTS BACK ON
477 02421 1350 TAD CLIPTR /** GET POINTER FROM INTERRUPT ROUTINE **
478 02422 3010 DCA CLKXR /USE AUTO=XR TO ACCESS HIGH-ORDER WORD
479 02423 3750 DCA I CLIPTR /**FIXES QUEUE CREATOR BUG**
480 02424 2410 ISZ I /OK, WE GOT A NIBBLE - BUMP HIGH-ORDER WORD
481 02425 5203 JMP CLKLP /FALSE ALARM (SIGH)

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482 / B555 000 N N GGGG
483 / B 0 0 NN N G
484 / B555 0 0 NN N G GC - THE CLOCK HAS STRUCK!
485 / B 0 0 N NN G G
486 / B555 000 N N GGGG
487
488 02426 1751 CLKOV, TAD I CLQ /REMOVE THE FIRST ENTRY FROM THE CLOCK QUEUE
489 02427 3276 OCA CLKTMP /AND PLACE IT ON THE FREE LIST.
490 02430 1777 TAD I (CLF /THIS ALLOWS US TO PLAY WITH IT TO OUR
491 02431 3751 OCA I CLQ /HEARTS CONTENT WITHOUT MISSING ANY TICKS
492 02432 1351 TAD CLQ
493 02433 3777 OCA I (CLF
494 02434 1276 TAD CLKTMP
495 02435 3351 OCA CLQ
496 02436 1410 TAD I CLKXR
497 02437 7450 SNA /CHECK FOR CANCELLED REQUEST
498 02440 5305 JMP FIXQ /YES = JUST DELETE FROM QUEUE
499 02441 3773 OCA I (CLKCMD
500 02442 1773 TAD I (CLKCMD
501 02443 7006 RTL /SET UP TO TEST BITS 1 AND 2 OF CMD WD
502 02444 7700 SNA CLA /CHECK FOR COMMAND 1 OR 3
503 02445 5266 JMP NOTRUN /NO = 0 OR 2.
504 02446 7420 SNL /WHICH ONE?
505 02447 5261 JMP NORSCD /1 = STRAIGHT RUN COMMAND
506 02450 1410 TAD I CLKXR
507 02451 3772 OCA I (TH /GET RESCHEDULE INTERVAL
508 02452 1410 TAD I CLKXR
509 02453 3771 OCA I (TL
510 02454 1772 TAD I (TH
511 02455 3770 OCA I (XTRA1 /USE RESCHED INTERVAL AS NEW SCHEDULE
512 02456 1771 TAD I (TL /AND RESCHEDULE INTERVAL
513 02457 3767 OCA I (XTRA2
514 02460 4766 JMS I (CLOINS /INSERT THE NEW REQUEST IN THE CLOCK QUEUE
515 02461 1773 NORSCD, TAD I (CLKCMD /GET TASK NUMBER
516 02462 0365 AND (177 /OUT OF COMMAND WORD
517 02463 4020 CAL
518 02464 0003 RUN /AND RUN THE JOB NOW.
519 02465 5305 JMP FIXQ /CLEAN UP THE QUEUE ENTRY

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520 /TEST FOR DERAIL REQUEST
521
522 02466 1410 NOTRUN, TAD I CLKXR /LOAD ARGUMENT INTO AC
523 02467 7420 SNL /DERAIL OR EVENT=FLAG REQUEST?
524 02470 5300 JMP SETEF /EVENT FLAG
525 02471 3276 OCA DRLADR /SAVE DERAIL SUBROUTINE ADDRESS
526 02472 1773 TAD I (CLKCMD
527 02473 0365 AND (177 /GET TASK NUMBER FROM COMMAND WORD
528 02474 4020 CAL
529 02475 0007 DERAIL /DERAIL THE TASK
530
531 02476 0000 CLKTMP, DRLADR, 0
532 02477 5305 JMP FIXQ
533
534 02500 3304 SETEF, OCA EPCOF /SAVE DATA FIELD OF EVENT FLAG
535 02501 1410 TAD I CLKXR /GET ADDRESS OF EVENT FLAG
536 02502 4020 CAL
537 02503 0005 POST /POST THE EVENT FLAG ASSOCIATED
538 02504 0000 EPCOF, 0 /WITH THIS TIMER REQUEST
539
540 02505 7201 FIXQ, CLA IAC
541 02506 1351 TAD CLQ
542 02507 3010 OCA CLKXR /IT IS POSSIBLE FOR THE INTERVAL
543 02510 1410 TAD I CLKXR /BETWEEN EVENTS ON THE QUEUE TO BE 0 -
544 02511 7450 SNA CLA /THIS MEANS THE EVENTS COME UP SIMULTANEOUSLY.
545 02512 1751 TAD I CLQ /WE MUST CHECK FOR SIMULTANEITY HERE
546 02513 7650 SNA CLA /WATCHING OUT FOR THE END OF THE QUEUE!
547 02514 5203 JMP CLKLP /IF NONE, GO WAIT FOR THE NEXT TICK
548 02515 5226 JMP CLKOV /SIMULTANEOUS REQUEST = GO PROCESS IT

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438

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549          /CLOCK INTERRUPT ROUTINE
550          /INSERT CONDITIONALIZED FLAG CLEARS FOR USER-DEFINED CLOCK HERE.
551
552          CLKINT, IFNZRO CLKTP&1      <CLSA> /CLEAR KW12/DKSEP FLAG
553          IFZERO CLKTP&1      <
554          IFZERO CLKTP&2      <
555          CLCL                /CLEAR POP S/A CLOCK FLAG
556          CLA                /JUST IN CASE??
557          >
558          IFNZRO TICKS-1 <
559          ISZ CLKCNT          /COUNT CLOCK TICKS PER SOFTWARE TICK
560          POSTDB             /UNLESS COUNT=1 - THEN WHY BOTHER?
561          TAD                (-TICKS /RESTORE FULL COUNT
562          DCA CLKCNT
563          >
564          >
565
566          02522 7201          CLA IAC          /** AC MAY NOT BE 0 HERE IF KW12 OR DKSEP **
567          TAD CLG            /SAVE POINTER TO LOW-ORDER TICK COUNT
568          DCA CLIPTR         /OF FIRST QUEUE ENTRY
569          ISZ TODL
570          JMP CLKGT          /BUMP TIME-OF-DAY
571          ISZ TODM
572          JMP CLKGT
573          TAD MIDNTH         /T.O.D. CLOCK OVERFLOWS AT MIDNIGHT -
574          DCA TODM           /WE MUST RESET TO A SPECIAL FUDGE TO
575          TAD MIDNTL         /ASSURE THAT IT WILL HAPPEN AGAIN
576          DCA TODL           /NEXT MIDNIGHT,
577          TAD DATE
578          DCA DATE           /BUMP DATE 1 DAY, THE CRUDE WAY
579          02537 3040          DCA DATE
580          02540 1751          CLKGT, TAD I
581          02541 7640          SZA CLA          /IF QUEUE IS NOT EMPTY,
582          ISZ I CLIPTR       /BUMP LOW-ORDER COUNT
583          POSTDB             /NOTHING DOING
584          STA                /**FIXES QUEUE CREATOR BUG**
585          DCA I CLIPTR       /PUT -1 BACK,,END OF FIX
586          TAD (CLKEF         /SET EVENT FLAG TO START DEQUEUEER RUNNING
587          POSTDB             /AS WE MAY HAVE REACHED A SIGNIFICANT TIME
588
589          02550 0000          CLIPTR, 0        /INTERRUPT-LEVEL POINTER
590          02551 2365          CLQ, ZROENT      /QUEUE INITIALLY EMPTY
591          IFNZRO TICKS-1 <
592          02552 7776          CLKCNT, -TICKS
593          >

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594
595          5000 DAYL= 600*SHERTZ /THESE STATEMENTS COMPUTE THE NUMBER OF TICKS
596          0005 DAYH= 6*SHERTZ*100 /IN A DAY AS A DOUBLE WORD QUANTITY
597          2361 DAYH= 25*SHERTZ*DAYH / = 250600*SHERTZ
598          2362 IFNZRO DAYL <DAYH=DAYH+1> /JUST FOR BORROW ON NEGATE
599          02553 5416          MIDNTH, =DAYH
600          02554 3000          MIDNTL, =DAYL
601          02562 2400
602          02563 0010
603          02564 7776
604          02565 0177
605          02566 2250
606          02567 2371
607          02570 2204
608          02571 2367
609          02572 2366
610          02573 2372
611          02574 4001
612          02575 2200
613          02576 1200
614          02577 2373
615          2600

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PAGE

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616 /CLOCK QUEUE FREE LIST = ALSO INITIALIZATION CODE
617
618 8888 EXRDDH: ENDEXC+17787688=ENDEXC /CALCULATE RDDH IN PAGE WITH EXEC TABLES
619 IFNZRO CLKQLN*6=EXROOM84888 4 /IF QUEUE WILL FIT THERE,
620 IFNZRO 188=EXRDDH84888 4 /AS WELL AS INITIALIZATION CODE,
621 =ENDEXC /THEN SAVE SOME SPACE
622 >
623
624
625 82688 6882 SEGPRE,
626 82681 2848 START, IDP /IDP WHEN MESSING WITH SKIP CHAIN!!
627 82682 1377 ISZ DATE /DATE CONTAINS POINTER TO CLOCK SKIP LOC =1
628 82683 3448 TAD (CLKSK
629 82684 1848 DCA I DATE
630 82685 1376 TAD DATE
631 82686 3848 DCA DATE
632 82687 1375 TAD (CLKINT
633 82618 3448 DCA I DATE
634 82611 6211 CDF 18
635 82612 1774 TAD I (7666 /SET DS/8 DATE WORD
636 82613 3848 DCA DATE /SET RTS DATE FROM IT
637 82614 6281 CDF CUR
638 82615 1773 TAD I (MIDNTH
639 82616 3837 DCA TODH /SET TIME TO MIDNIGHT (AS GOOD AS ANY TIME)
640 82617 1772 TAD I (MIDNTH
641 82628 3836 DCA TODL

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642 /INSERT CONDITIONALIZED INITIALIZATION CODE FOR USER-DEFINED
643 /CLOCK HERE = MUST ENABLE INTERRUPTS AND SET RATE.
644
645 82621 6131 IFZERO CLKTP 4
646 CLEI /ENABLE CLOCK INTERRUPTS FOR DK8EA,C
647 >
648 IFZERO CLKTP=3 4 /SPECIFIC DK8EP INIT CODE
649 STA
650 CLZE /ZERO COMMAND REGISTER ON DK8EP
651 TAD (5311-4188 /5318 = ENABLE INTS, 1 KHZ, MODE 1
652 >
653 IFNZRO CLKTP&1 4 /COMMON DK8EP, KW12 INIT CODE
654 TAD (4188 /4188 = 1 KHZ, MODE 1
655 CLLR /LOAD COMMAND REGISTER
656 CLA /CLLR DOESN'T CLEAR AC
657 TAD (=TICKS
658 CLAB /SCALE DOWN CLOCK TO SOFTWARE RATE
659 CLA /DOES NOT CLEAR AC
660 >
661 IFZERO CLKTP=1 4 /SPECIFIC KW12 INIT CODE
662 TAD (388 /FORCE CLOCK BUFFER INTO COUNTER AND
663 CLEN /ENABLE KW12 INTERRUPTS
664 CLA /THIS DOESN'T CLEAR AC EITHER
665 >
666 IFZERO CLKTP=2 4 /PDP8/A CLOCK INIT CODE
667 CLA IAC
668 CLEN /ENABLE CLOCK INTERRUPTS
669 CLA /((JUST IN CASE)
670 >
671 82622 5231 JMP FREELP

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672 /CLOCK QUEUE INITIALIZATION =
673 /THIS CODE IS WRITTEN TO SKIP EVERY SIXTH WORD SINCE IT IS
674 /SETTING THESE WORDS TO QUEUE POINTERS,
675 /** NO LITERALS IN THIS CODE! **
676
677 02623 0000 ZBLOCK ,=BEGFRE*6+BEGFRE+7=, /MOVE US TO THE 2ND WORD OF A 6 WD BLOCK
678
679 02631 1253 FRELP, TAD FREPTR
680 02632 1254 TAD F6
681 02633 3653 DCA I FREPTR /CHAIN EACH QUEUE ENTRY TO THE NEXT ONE
682 02634 1253 TAD FREPTR
683 02635 7410 SKP
684 02636 0000 0
685 02637 1255 TAD FRELIM /THIS LOC GETS DESTROYED BY OUR LOOP!
686 02640 7700 SMA CLA
687 02641 9247 JMP INIXIT /DONE = END INITIALIZATION CODE
688 02642 1653 TAD I FREPTR /GET NEW QUEUE ENTRY ADDRESS
689 02643 7410 SKP
690 02644 0000 0
691 02645 3253 DCA FREPTR
692 02646 9231 JMP FRELP
693 02647 3653 INIXIT, DCA I FREPTR /ZERO LAST POINTER
694 02650 6001 ION
695 02651 5656 JMP I PCLKLP /START WAITING FOR CLOCK TICKS
696 02652 0000 0
697 02653 2600 FREPTR, BEGPRE
698 02654 0006 F6, 6
699 02655 5013 FRELIM, 13=ENDFRE /SO WE NEVER GO PAST "ENDFRE"
700 02656 2403 PCLKLP, CLKLP
701 02772 2554
702 02773 2553
703 02774 7666
704 02775 2516
705 02776 0004
706 02777 6133
707 3000
708 PAGE
709 IFZERO CLKQLN*6+BEGFRE=.84000 <
710 ZBLOCK CLKQLN*6+BEGFRE=.05 /+5 FOR SAFETY
711 > /MAKE SPACE FOR ENTRIES IF MORE THAN 21 DESIRED
712 3000 ENDFRE= ,
713 $$$

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AC0002 7326 FRELIM 2655 SENDW 0011
AC2000 7332 FREPTR 2653 SETEP 2500
AC3777 7350 F6 2654 SMERTZ 0074
AC4000 7330 GETICK 2416 SKPINS 0006
AC7775 7346 GETHSG 2200 START 2600
AC7776 7344 HERTZ 0170 SUNIT 0000
BEGPRE 2600 HGMFLD 0030 SUSPND 0004
BLKARG 0010 ICS 0016 SWAPPE 0021
CAL 4020 INMERE 2323 SWPWT 0400
CHECKP 0001 ININT 0000 SYS 0010
CLDI 6132 INIXIT 2647 TASK 0001
CLEI 6131 KILLQE 2311 TPTABL 1367
CLF 2373 LPT 0004 TH 2366
CLIPTR 2550 LTA 0006 TICKS 0002
CLKCMD 2372 MADDR 2202 TL 2367
CLKCNT 2552 MCR 0005 TODH 0037
CLKEF 2400 MCREP 0041 TODL 0036
CLKINT 2516 MCRSY$ 0001 TSTABL 1244
CLKLP 2403 MIDNTH 2553 TSWFLG 0035
CLKOV 2426 MIDNTL 2554 TTL 2374
CLKQLN 0020 HSGCDF 2204 TTY 0003
CLKOT 2540 HSGTBL 1176 UNBARG 0012
CLKTMP 2476 HSGWT 0020 USERWT 0100
CLKTYP 0000 NETWT 0010 WAITE 0002
CLKWT 2401 NOIMEF 2246 WAITM 4425
CLKXR 0010 NDNRT 4000 XTRA1 2204
CLOCK 0001 NDRBCD 2461 XTRA2 2371
CLQ 2551 NDRTRN 2466 ZROENT 2365
CLOINS 2250 NYASKS 0023
CLSK 6133 NULADD 2306
COMMAN 0043 OSFILL 0004
CQ 2370 OSFLOS 0002
CSA 0013 OSKBDV 0030
CSAF 0014 OSYSD 0010
CT 2245 OTTDOV 0031
CUR 0000 OS 0023
DATE 0040 OSF 0020
DAY 2362 PARTBL 1420
DAYL 0000 PARTNS 0000
DEMAIL 0007 PCLKLP 2656
DF32 0012 POP12 0000
DNENT 0001 POPDE 0001
DRLADR 2476 PDST 0005
OTA 0007 POSTOS 5424
EAE 0001 PWRP 0002
EFCDF 2504 PWRFAL 0001
EFMT 2000 QSRCLP 2253
ENABWT 0040 RECEIV 0001
ENDEXC 2200 RESTBL 1414
ENDFRE 3000 RF00 0011
EORMWT 0200 RK0 0010
EXROOM 0000 RUN 0003
FIXQ 2505 RUNWT 1000
FREE 4000 RX0A 0017
FRELP 2631 SEND 0000

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ERRORS DETECTED: 0
LINKS GENERATED: 0

AC0002 112# 397
AC2000 111#
AC3777 110#
AC4000 109#
AC7775 108# 322 358
AC7776 107#
AD 135#
BEGPRE 450 624# 677 677 697 700 789
BLKARG 130#
CAL 116# 316 352 517 520 536
CHECKP 54#
CLAB 278# 650
CLCL 284# 555
CLOI 272#
CLEI 271# 646
CLEN 279 263# 663 660
CLF 413 416 418 419 458# 466 498 493
CLIPTR 477 479 568 502 505 509#
CLKCMD 331 342 379 402 410 430 449# 499 500 515
CLKCNT 526
CLKCF 559 562 592#
CLKINT 450# 463 475 506
CLKLP 552# 632
CLKOV 357 412 462# 481 547 700
CLKQLN 488# 540
CLKQT 95# 619 708 709
CLKTYP 570 572 580#
CLKTYP 489 494 530#
CLKTYP 94# 269 274 202 200 552 553 554 645 648
CLKWT 653 661 666
CLKXR 460# 470
CLKXR 303# 335 336 338 346 348 370 376 382 398
417 421 424 429 431 433 435 478 480 496
506 508 522 535 542 543
CLLR 277# 655
CLOCK 63# 93 297
CLQ 365 488 491 492 495 541 545 567 580 590#
CLQINS 356 363# 442 514
CLSA 280# 552
CLSK 270 276 285# 627
CLZE 275# 650
COMMAN 160#
CO 366 367 414 447#
CS 138#
CSAF 74#
CSAF 75#
CT 136 333 354# 360 369 371 394 420 436 438
439 441
CUR 175 175 299# 364 637
DATE 166# 577 579 626 628 629 631 633 636
DAY 596 597 597 598# 598 599
DAYL 595# 598 600
DERAIL 129# 529
DF32 73#
DNEWT 149#
DRLADR 525 531#
DTA 64#
EAE 50#
EPCDF 534 538#

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447

448